FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

FEBRUARY, 1953

OHIO STATE UNIVERSITY LIBRARY

Despite the tall Severin Hotel alongside the burning warehouse, and windows overlooking the fire, Indianapolis fire fighters confined the blaze to the building in which it started. (Article on page 167.)

A CASE · SHEPPERD · MANN PUBLICATION

Ray Woertz
Eland Sandelin
Theodore Singer
William C. Donovan
James Poirier
Norman Litz, Chief

City of Waukegan
Waukegan, Illinois

ROBERT E. COULSON
MAYOR

EDWARD R. HOLMBERG
CITY CLERK

ROBERT F. WILLIAMS
CITY TREASURER

July 5, 1952
Central Fire Station
Waukegan, Ill.

J.H.Emerson Co.
22 Cottage Park Ave.
Cambridge,Mass.

Gentlemen:-

As one of the earliest and most progressive Inhalator Squads in the Middle West,in the fire service,we feel that you would be interested in our experience with the Emerson Resuscitator which we have used for the past nine years without mechanical failure; Two(2)check valves were replaced without interruption of service or cost to us.

After 900 Inhalator calls and 100 Demonstrations, our dual unit was returned to your factory; The revamped unit was returned to us with mechanisms overhauled,new rubber installed,and a new case,at the cost of $71.00.

We recently added an Auxillary Emerson Resuscitator to our second Rescue Squad Wagon,which was presented to the fire department by the people of the community,who want us to have the best equipment obtainable.

In the field of safety,training alone is not enough; effecient tools are necessary to save life,and that is why we have a preference for the Emerson Resuscitator,a product that has served us well in the past and will continue to aid and assist the stricken in our city.

Thanking you for past considerations.

Yours For Safety,

Norman Litz

Chief,Fire Department

SIMPLE
•
SAFE
•
ACCEPTED
for use by laymen
•
EFFECTIVE

EMERSON RESUSCITATORS

- Rotates 360° flashing protection to every angle!
- Not one but *two* beams mounted back to back!
- Protects you even when vehicle is stopped, 360° flashing gives you an "island" of protection!
- Simple to install, weatherproof, trouble-free!
- A truly distinctive signal that can't be missed!

FEDERAL ***BEACON RAY LIGHT***

THE ONE DISTINCTIVE 360° FLASHER

The WARNING PAIR THAT GETS YOU THERE *BETTER THAN ANY OTHER*

FEDERAL ***NEW Q SIREN***

THE *LOUDEST* SIREN OF THEM ALL!

- Completely new!
- Loudest, most penetrating siren on the market!
- New clutch gives exceptionally-long coasting period.
- New motor gives greater sound volume with less current than many smaller sirens.
- Rugged, precision-built — today's *ultimate* in sirens!

Only Federal makes and sells the sensational Q siren and distinctive Beacon Ray Light. Write now for bulletins.

FEDERAL ENTERPRISES, INC.

Formerly: FEDERAL ELECTRIC COMPANY, INC.

8702 SOUTH STATE STREET CHICAGO 19, ILLINOIS

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING. THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

CONTENTS

Vol. 106 — February, 1953 — No. 2

	Page
With the Editor — By Fred Shepperd	107
Major Elements of Multiple Company Operations — By Roi B. Woolley	108
Arson Investigation — By Bernard J. Mulcahey	113
Practical Fire Service Rescue — By Joe Mahaffey	115
Digger Breaks Gasoline Line; Blast and Fire Injure 12 — By Paul C. Ditzel	119
Short Cuts and Gadgets	124
News of the Manufacturers	126
False Alarms	128
Among the Buffs — By Paul C. Ditzel	130
The Watch Desk — By Roi B. Woolley	134
What's Burning?	140
World-Wide Fire News — By Roi B. Woolley	142
Convention Dates	144
Persons in the News	146
Obituaries	148
The Round Table — Out-of-Town Aid	150
Questions and Answers	164

MEMBER
Audit Bureau of Circulations
Associated Business Publications

Rail-Splitter Common Sense

ONE of the attributes that have made America great is our refusal to admit that anything "can't be done."

● Early in the Civil War a Swede named Ericsson invented the monitor (not the "monitor-nozzle" but a gunboat!) and needed a government appropriation to build it. Navy officials said the heavy armor would sink such a vessel. "But," said Abraham Lincoln, "on our Western rivers we figure just how many tons will sink a flat-boat. Can't your clerks do the same for an armored vessel?"

● The man whose birthday we celebrate this month refused to admit defeat. He had no truck with those who said "it can't be done." Nor would he have held with those "rule-of-thumbers" of the Fire Service whose motto is "that's the way we've always done it—and it's good enough for me."

● Most of these unregenerates are still trying to fight fires with the tools and techniques of lost yesterdays. They can't realize that rule-of-thumb has given way to science in today's fire control—as in everything else. Improvements such as water fog . . . fog foam . . . wet water . . . dry powder . . . high pressure, and low velocity—these are strictly for the books, say they.

● Fortunately for the Fire Service, these dissenters are hopelessly outnumbered by the men with Abe Lincoln's vision and common sense—leaders, we're proud to say, who make up the great bulk of FIRE ENGINEERING'S vast and enthusiastic family.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Wastes Engineering*, etc. ¶Subscription price: U. S., Latin America and Canada, $3.50 a year; Foreign, $4.50; Single copies, 40c. ¶Member of Audit Bureau of Circulations and Associated Business Publications, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 5, 1879.

¶Contents of this issue copyrighted, 1953, by Case-Shepperd-Mann Publishing Corp.

¶Printed in U.S.A.

President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Eastern Representatives, WILLIAM J. GIBSON, ALFRED J. HOUGHTON; CHICAGO OFFICES L. M. ROCHE and ROBERT D. CLEVENGER, 8 So. Dearborn St., Chicago 3, Ill.; LOS ANGELES; AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif.

A CASE-SHEPPERD-MANN PUBLICATION
"*Specialized* Leadership"

FABRIC

288 TWILL

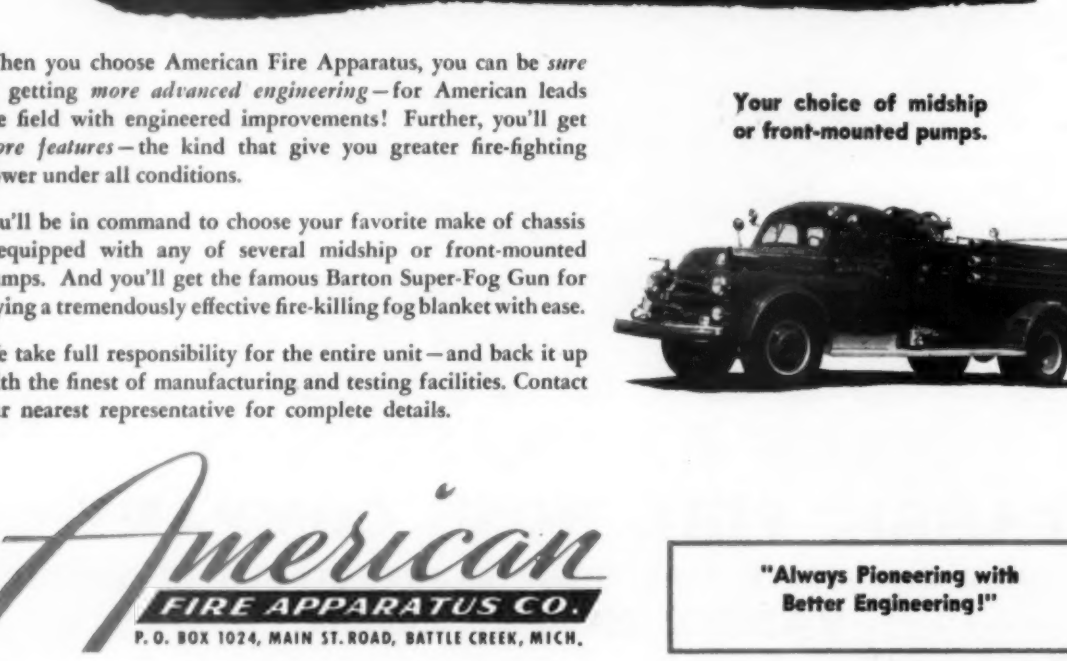
MADE BY CRAFTSMEN

FABRIC FIRE HOSE COMPANY

THE ONLY EXCLUSIVE FIRE HOSE MANUFACTURER IN AMERICA

SANDY HOOK, CONN.

more FIRSTS... *with* more FEATURES



When you choose American Fire Apparatus, you can be *sure* of getting *more advanced engineering*—for American leads the field with engineered improvements! Further, you'll get *more features*—the kind that give you greater fire-fighting power under all conditions.

You'll be in command to choose your favorite make of chassis—equipped with any of several midship or front-mounted pumps. And you'll get the famous Barton Super-Fog Gun for laying a tremendously effective fire-killing fog blanket with ease.

We take full responsibility for the entire unit—and back it up with the finest of manufacturing and testing facilities. Contact our nearest representative for complete details.

Your choice of midship or front-mounted pumps.

American
FIRE APPARATUS CO.
P. O. BOX 1024, MAIN ST. ROAD, BATTLE CREEK, MICH.

"Always Pioneering with Better Engineering!"

New B.F.Goodrich Highflex fire hose premium quality at no extra cost

Flexible, easy to coil, 23% lighter, saves space

It's more flexible than the sleeve of your fire coat. That's Highflex — the new fire hose just developed by B. F. Goodrich. Highflex has all the features of the most expensive, premium-type hose, yet it costs no more than regular hose.

Most flexible hose made — It's a chemically-produced fiber that makes Highflex lighter, more flexible than other hose. This fiber, found only in B. F. Goodrich hose, is used as "filler" cords — the cords that go *around* the hose and carry the load under pressure.

3 times stronger — Compared with cotton, normally used as filler cords in other hose, this chemically-produced cord has *3 times* the strength for the same weight of cord. Every length of BFG Highflex is tested to 400 lbs. pressure.

It costs no more — Add it up. Because Highflex is more flexible you can rack more hose on the truck bed. Because it's 23% lighter, easier to handle, you cut minutes off loading time. Because it's made of stronger reinforcing cords you get longer hose life. But with all these extra features, you pay nothing extra when you buy B. F. Goodrich Highflex. That means you get more hose service per dollar. Your BFG Fire Hose Distributor has samples of the new Highflex hose, and will be glad to show it to you and quote on your requirements. *The B.F. Goodrich Company, Industrial & General Products Division, Akron, O.*

Fire Hose
BY
B.F. Goodrich

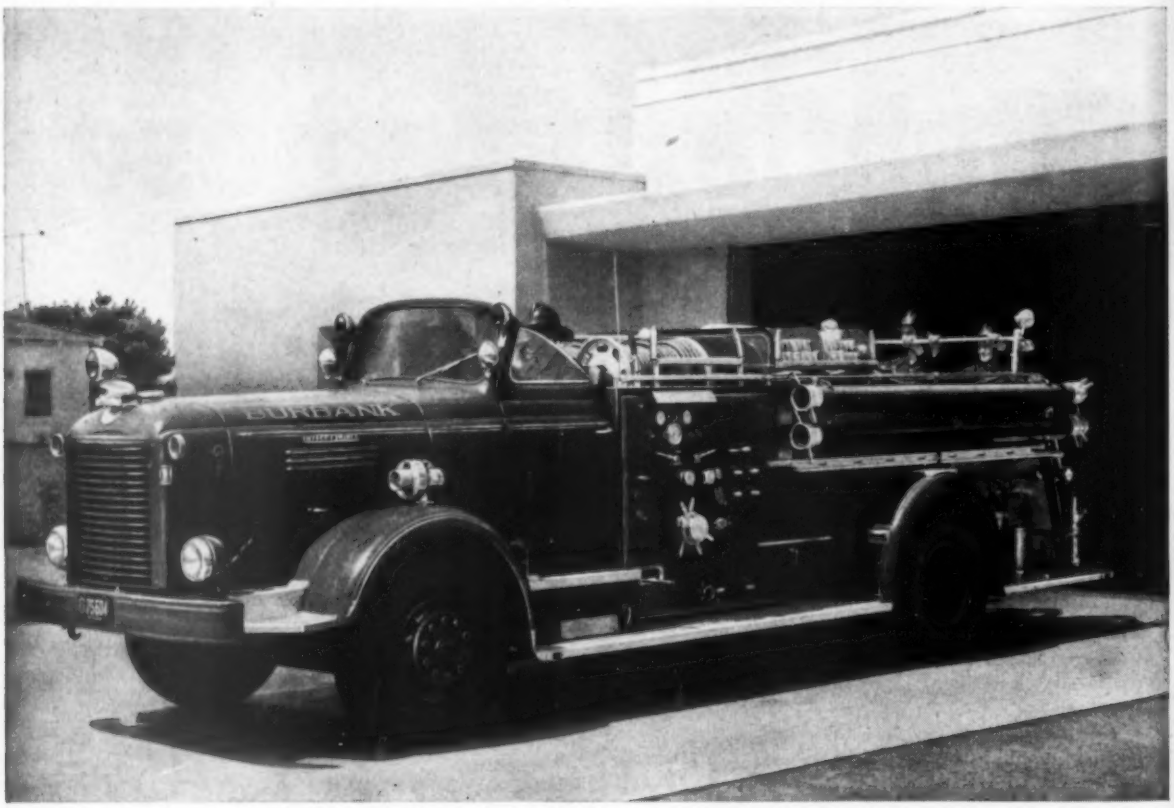
Comes out fighting at the bell!

International fire truck chassis have what it takes to fight fires better!

International fire truck chassis do *more* than merely meet Fire Department requirements. They *exceed* them!

Here is speed, flexibility, power to spare—exceptional handling ease and maneuverability. From front to rear, Internationals are engineered for safety, long life, surprisingly low operating and maintenance costs, and the traditional toughness and dependability that has kept International first in heavy-duty truck sales for 21 straight years.

Hear the full story about International fire truck chassis from the nearest International Truck Dealer or Branch.



NEW IN BURBANK, CAL. International L-306, 171-inch wheelbase. Two-way radio equipped, powered by Hall-Scott 275-horsepower engine. Five-speed transmission. Mounts a water pump capable of delivering 1,250 GPM. Truck carries 48-feet of extension, roof and folding ladder. There are other International specialized fire truck chassis with pumping capacities ranging from 500 to 750 GPM. These models include the L-166, L-176, L-186, L-1856, L-196 and L-206.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

International Harvester Builds McCormick Farm Equipment and Farmall Tractors... Motor Trucks... Industrial Power... Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

"Standard of the Highway"

Drownings

Heart Attack

Electric Shock

Carbon Monoxide

Suffocation

How the M.S.A. PNEOLATOR helps make West Wyoming, Pa. a good place to live—longer

William Kroski, like several other people in West Wyoming, probably read special meaning into this opening line from the area's leading newspaper: "If you reside in West Wyoming your chances of recovering from asphyxiation or severe heart attack are greater than in many communities of Wyoming Valley."

Mr. Kroski was found unconscious from gas fumes. Minutes after the alarm, volunteers from the Hose Company and the police arrived, and administered automatic artificial respiration with the M.S.A. Pneolator. Mr. Kroski recovered.

There were more successful rescues—two heart attack victims, a brain concussion case, a victim of acute indigestion, an asthma case and several non-emergency incidents. Add them up and you can see why the folks of West Wyoming feel that the Pneolator, applied by the expert hands of the local firemen and police, has helped to make their community a good place to live . . . longer.

Write today for details on the M.S.A. Pneolator, the modern, portable device accepted by the American Medical Association for automatic artificial respiration of asphyxia victims by means of intermittent positive pressure, without suction.

Note: The first few minutes after breathing has ceased are the most critical. Immediate application of manual artificial respiration should be started and continued until the Pneolator is in use.

MSA
SAFETY EQUIPMENT HEADQUARTERS

Call the M.S.A. man on your every safety problem . . . his job is to help you.

MINE SAFETY APPLIANCES COMPANY
Braddock, Thomas and Meade Streets, Pittsburgh 8, Pa.
At Your Service: 76 Branch Offices in the United States

MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED
Toronto, Montreal, Calgary, Winnipeg, Vancouver, New Glasgow, N.S.
Representatives in Principal Cities in Mexico, Central and South America
Cable Address "MINSAF" Pittsburgh

Specify

AKRON GENUINE ROCKERLUG COUPLINGS

They Deserve the Best . . . AKRON BRASS!

Back of Akron Rockerlug Couplings is the "know how" gained in more than 34 years of manufacturing brass goods for fire and mill use.

Akron Rockerlug Couplings are used by more fire departments than any other—convincing evidence of their superiority.

Remember—it costs no more to specify Genuine AKRON ROCKERLUG.

AKRON BRASS MFG. COMPANY, INC.
WOOSTER, OHIO

AKRON BRASS
FIRE FIGHTING EQUIPMENT

WHAT'S NEW IN MOTOR FIRE APPARATUS?

NEW ideas in apparatus design are the result of experience and sound engineering. That is definitely true of MAXIM apparatus. We strive constantly to improve the effectiveness and efficiency of our apparatus. You can be sure of getting all the best of the new features where you choose MAXIM.

WE produce a complete line of motor fire apparatus—City Service Ladder Trucks; Quadruples; Hose Wagons; Rescue and Squad Cars; 500-750-1000-1250 and 1500 gallon pumpers—and all-steel hydraulically controlled aerials 65-75 and 85 feet. Also the MAXIM MAGIRUS 100 foot rescue ladder. Consult us on all apparatus problems.

MAXIM MOTOR COMPANY
MIDDLEBORO, MASS.

E&J...the World-Wide Lifesaver

THESE FOREIGN COUNTRIES AND U. S. TERRITORIES USE E & J RESUSCITATORS

ALASKA
ANGOLA
ARGENTINA
AUSTRALIA
BELGIAN CONGO
BELGIUM
BRAZIL
BULGARIA
CANADA
CHILE
CHINA
COLOMBIA
COSTA RICA
CUBA
CYPRUS
CZECHOSLOVAKIA
DOMINICAN REPUBLIC
ECUADOR
FRANCE
FRENCH MOROCCO
GERMANY
GREECE
GUATEMALA
HAITI
HAWAII
HONDURAS
ICELAND
INDIA
ITALY
JAPAN
MEXICO
MOZAMBIQUE
NETHERLANDS
NEW ZEALAND
NICARAGUA
NIGERIA
NORWAY
PANAMA CANAL
PERU
PHILIPPINES
POLAND
PORTUGAL
PUERTO RICO
RUMANIA
SALVADOR
SAUDI ARABIA
SOUTH AFRICA
SUEZ CANAL
SWEDEN
SWITZERLAND
THAILAND
TIMOR
TRIESTE
TUNESIA
URUGUAY
VENEZUELA

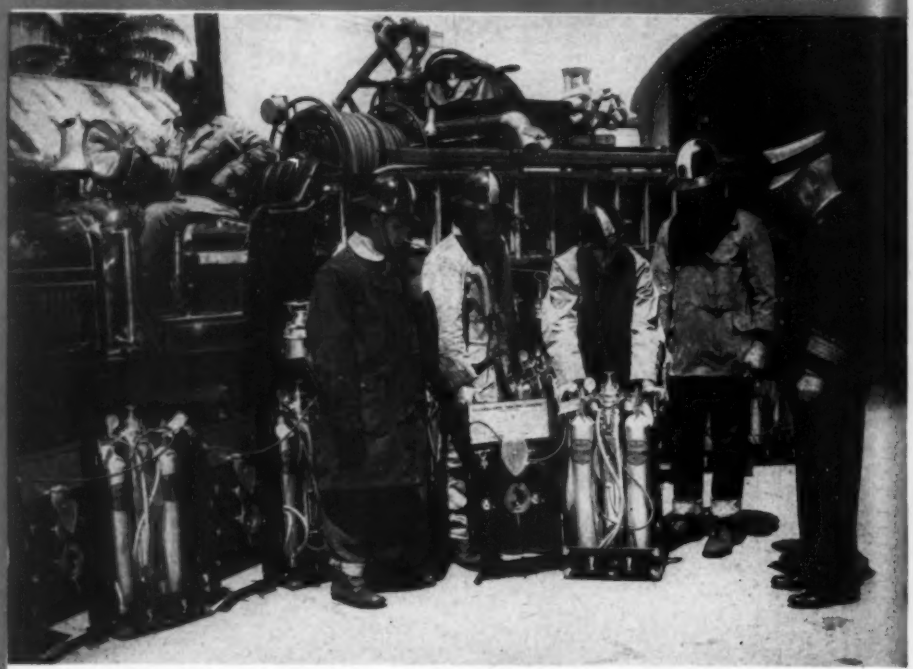
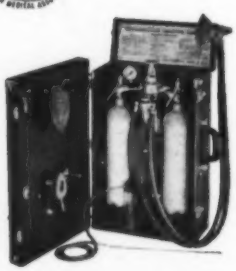


Photo courtesy Honolulu Star-Bulletin

NINE E&J RESUSCITATORS are standard Life Saving Equipment in HONOLULU

Life-saving services in these 57 foreign countries and U.S. Territories, in most cases located thousands of miles from the United States, are unavoidably "on their own" far more than similar services here. Consequently they select their equipment with great care. First, of course, they require equipment that will provide maximum effectiveness of treatment in complete safety for adult, child or infant. Second, it must be so completely automatic in operation and so simple to use that the chance of error in operation or judgment is practically eliminated. But especially important in their case, it must remain highly dependable year after year regardless of extremes in weather or conditions of use and it must remain free from frequent need for repairs. *In every one of these foreign countries and U.S. Territories life-saving services have selected E & J Resuscitators as standard equipment!*



E&J RESUSCITATOR • ASPIRATOR • INHALATOR

FROM MOZAMBIQUE TO U.S.A.

Your assurance of saving victims of asphyxiation is greater when you have an E & J Resuscitator available for immediate use. It breathes completely for the victim, using pure life-giving oxygen. It does it automatically, efficiently, safely, tirelessly and with built-in skill. Most hospitals throughout the world use it routinely; Rescue Squads say it is their greatest life-saving tool.

DON'T BE WITHOUT IT!

To see for yourself write to E&J today for a free demonstration

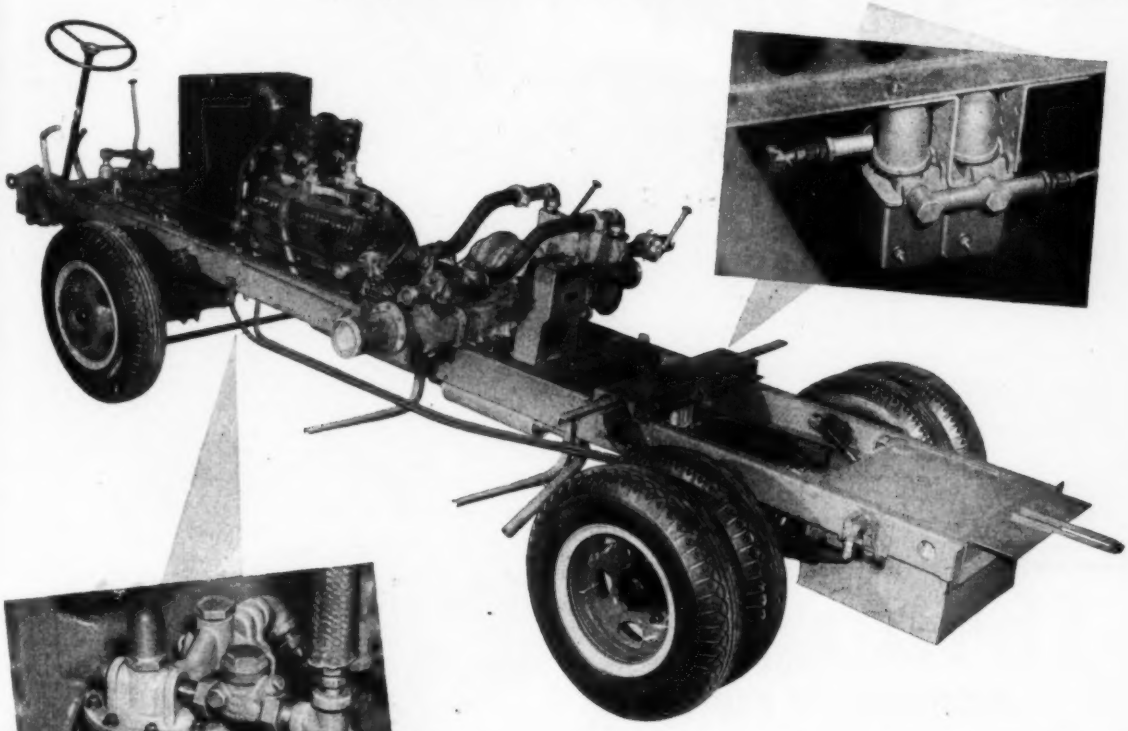
E & J MANUFACTURING CO., Dept 526-6, Burbank, California

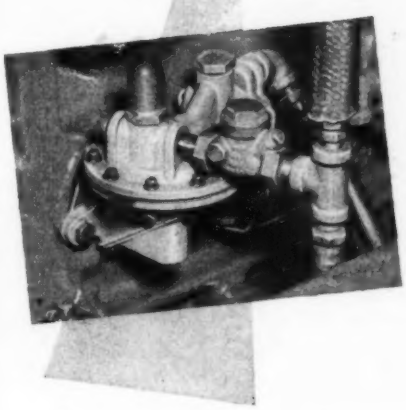
Originator and world's principal producer of automatic resuscitators

THERE'S *Extra Value* FOR YOU . .

IN AMERICAN-LAFRANCE FIRE ENGINES

Mechanical-Electrical Double Fuel Pump System Guarantees Engine Fuel Supply





The American-LaFrance double fuel pump system assures a dependable fuel supply. Two fuel pumps are provided, one mechanical and one electrical. Each fuel pump has capacity to supply an adequate quantity of gasoline for maximum engine power. The systems operate in parallel from the gasoline tank to the carburetors for instant starting. When the engine is running, the mechanical pump furnishes the required fuel. If for any reason the pressure in the supply line at the carburetor drops below three pounds, the electric pump automatically goes into operation to maintain correct pressure and supply. This feature of added dependability is another EXTRA VALUE provided by American-LaFrance.

This is the thirteenth advertisement in a series showing the Extra Value features in American-LaFrance Fire Engines.

AMERICAN-LAFRANCE-FOAMITE CORPORATION

ELMIRA, NEW YORK, U. S. A.

LAFRANCE FIRE ENGINE AND FOAMITE LIMITED

TORONTO 9, ONTARIO, CANADA

NEW McCULLOCH

CENTRIFUGAL FIRE PUMP

MODEL 7 FP

Weighs only 57 pounds complete!

Delivers 250 gallons per minute!

Develops pressures up to 100 psi!

Primes at 25 feet suction lift!

Delivers fog, stream, or foam!

LIGHT, POWERFUL McCULLOCH 7 FP PUMP CUTS FIRE-FIGHTING TIME

One man can carry this fast-starting, high-capacity fire pump. It's fast on the scene—and fast in action. Its features are unmatched by any other pump on the market.

Will operate three 1½-inch, 50-foot hoses with ⅜-inch tips, 55 pounds pressure in each line!

FEATURES

Special McCulloch 7-hp, 2-cycle engine • Special McCulloch self-priming centrifugal pump • Automatic-rewind cable starter; no ropes • Shielded against falling water • Hot spark for fast starting in any weather • Lubricated throughout by fuel mixture; no oil reservoirs, grease cups, or stuffing boxes • No bearings in pump; non-clogging type impeller mounted on engine shaft • Engine controls conveniently grouped in panel • Fuel tank built in; 3-way valve for auxiliary tank, if needed • Weighs 57 lb.; easy-carry handle at balance center.

PERFORMANCE CHART *(with 10-foot suction lift)*

Discharge Pressure PSI	10	20	30	40	50	60	70	80	90	100
Discharge Hd. Ft. Water	23	46	69	92	115	138	161	184	207	231
U. S. Gal. Per Minute	250	227	197	164	130	101	78	54	38	25

NATIONWIDE SALES AND SERVICE

5-1201

McCULLOCH

McCulloch Motors Corporation, Los Angeles 45, Calif.
Export Dept.: 301 Clay St., San Francisco 11, Calif., U. S. A.
Canada: 220 W. First Ave., Vancouver, B. C.
525 First Ave., Quebec, Quebec
224 N. George Street, Peterboro, Ontario

where life's at stake...

Protecting Binghamton, N. Y., State Hospital is this Mack Type 85, 225 HP, 4-wheel, 75-foot aerial ladder truck with ladder nozzle.

MACK is on guard!

Fire protection in institutions where aid from a municipal or district fire department is not immediately available presents many special problems. However, one precaution is universal... that of providing the best fire-fighting equipment that money can buy. That's why so many institutions are turning to Mack.

First and foremost, Mack fire apparatus are reliable—because of advanced design and most complete control over the manufacture of components. They are easy to operate—through simplicity of controls and accessibility of equipment. And they are rugged and long-lived—are "out of service" less.

Whether you are planning on apparatus for institutional or industrial fire brigades, or for regular fire department service—whatever the size—you should consider nothing less than the finest. Have a Mack representative show how you can do just that when you *Modernize with Mack.*

modernize with

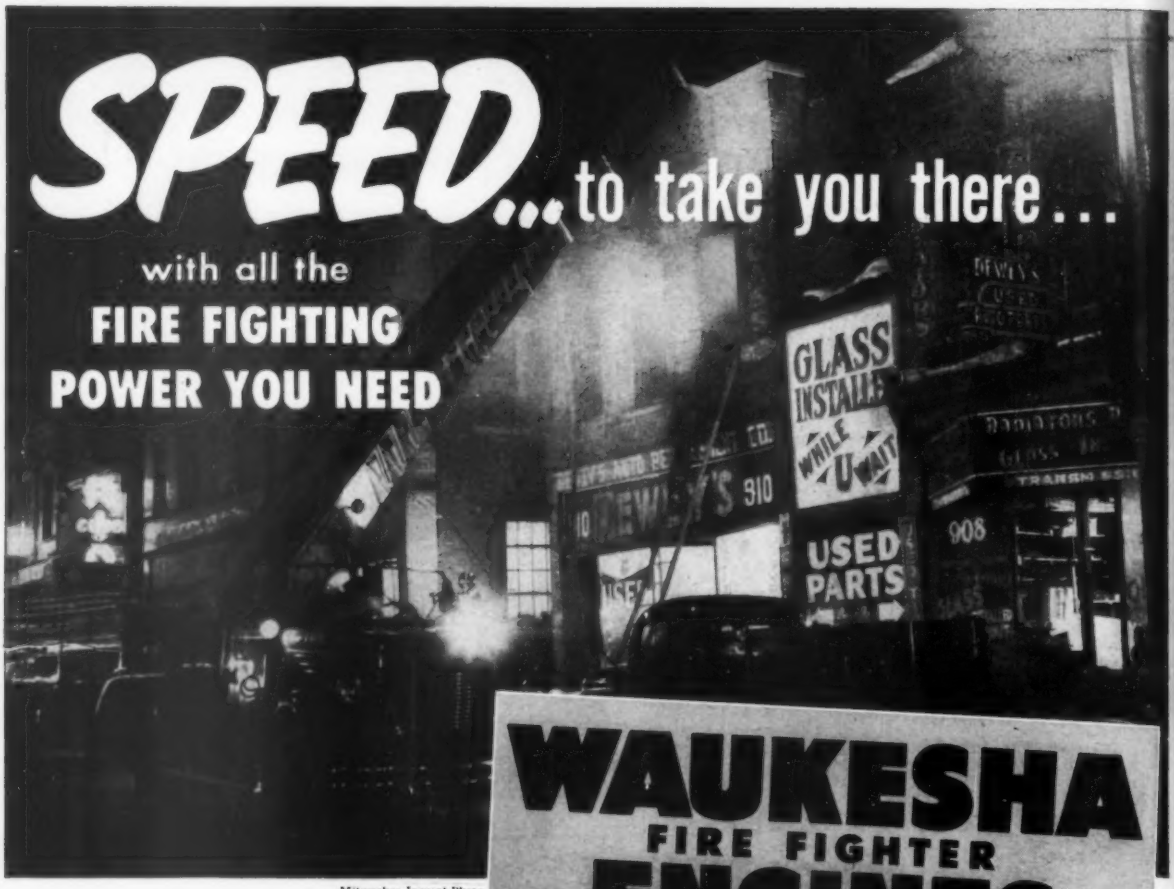
MACK MANUFACTURING CORPORATION
Fire Apparatus Division
Allentown, Pa.

Factory branches and dealers in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

TRIPLE COMBINATION PUMPERS — 500 TO 1250 GPM . . . SQUAD AND HOSE WAGONS . . . 65', 75', AND 85' AERIALS . . . COMBINATION LADDER TRUCKS

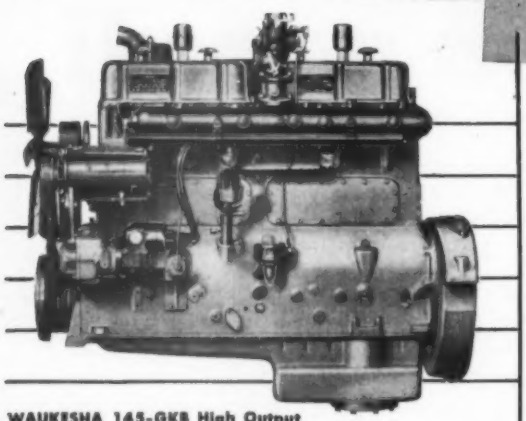
SPEED... to take you there...

with all the
FIRE FIGHTING POWER YOU NEED



Milwaukee Journal Photo

WAUKESHA FIRE FIGHTER ENGINES



WAUKESHA 145-GKB High Output FIRE FIGHTER Engine — six-cylinder 5¼-in. bore x 6-in. stroke, 779 cu. in. displ.; develops 240 hp. at 2400 rpm. Arranged for full electrical equipment and all modern accessories.
Send for Bulletin 1594.

- **Dual Ignition**
- **3½-inch, 7-bearing Hardened Crankshaft Counterbalanced and Vibration Dampened**
- **Precision, Extra High Capacity Bearings**
- **Full Pressure Lubrication**
- **Overhead Valves with Stellite-faced Exhaust Valves and Seats**
- **Removable Wet Sleeve Cylinders**
- **and every wanted fire engine feature**

WAUKESHA MOTOR CO., WAUKESHA, WIS.
NEW YORK TULSA LOS ANGELES

202

Waukeshas power Pirsch Aerial Ladder Trucks, both 4 and 6-wheel types; and Pirsch Pumpers.

It's always **ATLAS**

SAVING LIVES

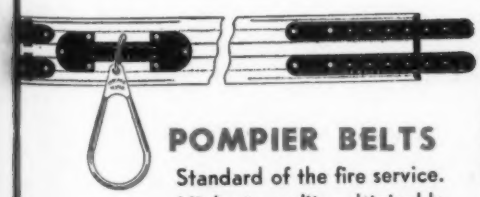
—is your job—and ours!

AT fires—an ATLAS LIFE NET is an absolutely necessary piece of equipment! In training—an ATLAS TRAINING NET is definitely an aid to confidence—and a possible life saver, too! No well equipped fire department can afford to be without both. And good practice calls for a life net on pumpers as well as ladder and rescue trucks. Their acceptance and reliability by fire departments the world over attests to their excellence. In training work, a training net speeds training by giving your men greater confidence. At the same time it insures safety—that means no accidents—no fatal falls. A single lacing line keeps net taut enough to walk on. Enclosed shock absorbers take the strain. All of our nets are unconditionally guaranteed as to workmanship.

SPECIFY ATLAS LIFE NETS ON EVERY PUMPER—SPECIFY AND BUY ATLAS TRAINING NETS FOR EVERY TRAINING TOWER.

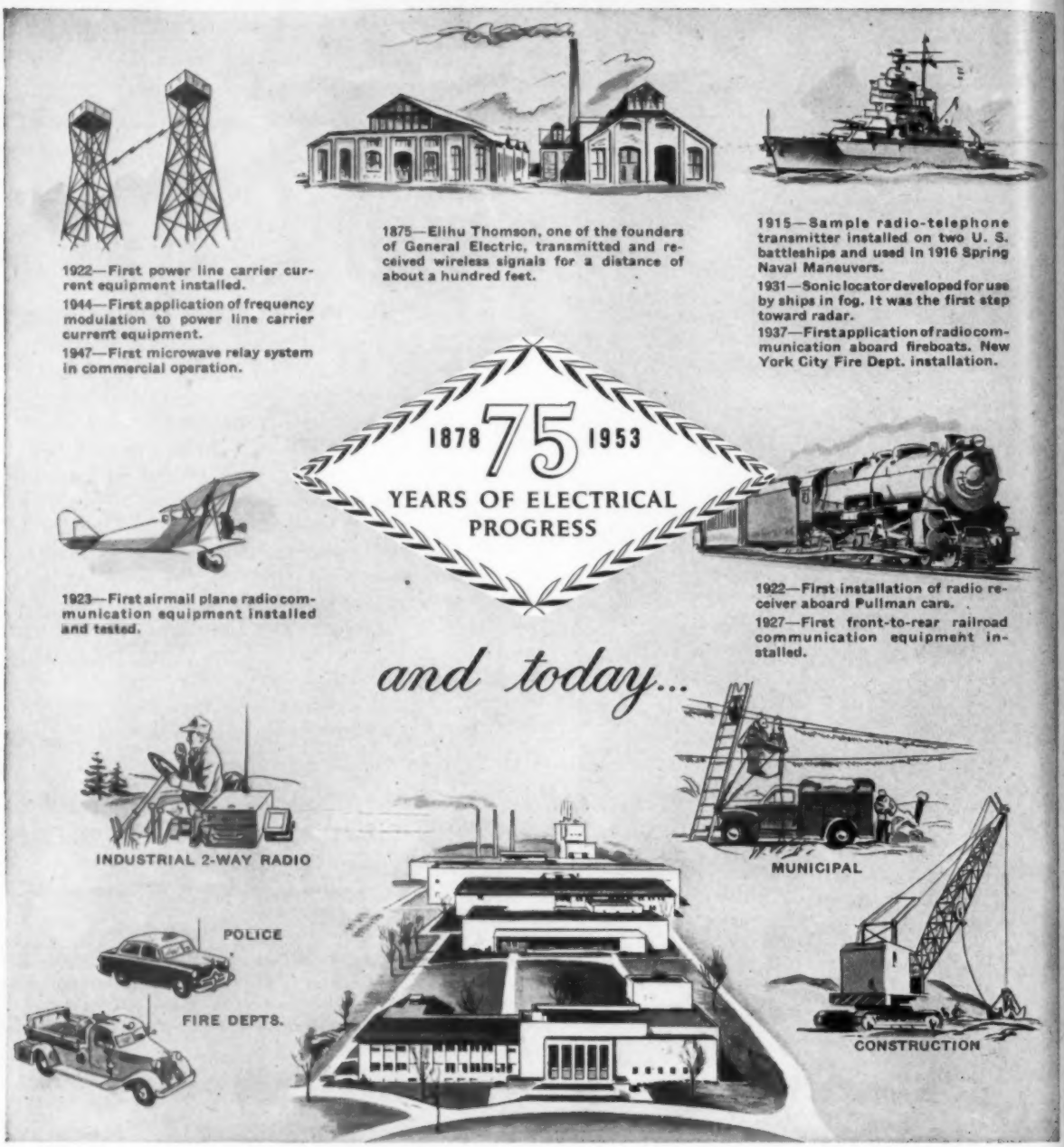
CRASH AXE Forged steel one-piece axe and handle. Moulded rubber handle grip withstands 20,000 volts. Heat treated and hardened edge for cutting through metal. Standard equipment for aircraft, squad cars, officers cars. Can be had with or without leather sheath for attaching to belt.

ATLAS SAFETY EQUIPMENT CORP.
27 WARREN STREET NEW YORK 7, N. Y.



POMPIER BELTS
Standard of the fire service. Highest quality obtainable anywhere. Specify ATLAS POMPIER BELTS — and be sure!

for **NETS** LIFE AND TRAINING NETS


1922—First power line carrier current equipment installed.
1944—First application of frequency modulation to power line carrier current equipment.
1947—First microwave relay system in commercial operation.
1875—Elihu Thomson, one of the founders of General Electric, transmitted and received wireless signals for a distance of about a hundred feet.
1915—Sample radio-telephone transmitter installed on two U. S. battleships and used in 1916 Spring Naval Maneuvers.
1931—Sonic locator developed for use by ships in fog. It was the first step toward radar.
1937—First application of radio communication aboard fireboats. New York City Fire Dept. installation.
1878 75 1953
YEARS OF ELECTRICAL PROGRESS
1923—First airmail plane radio communication equipment installed and tested.
1922—First installation of radio receiver aboard Pullman cars.
1927—First front-to-rear railroad communication equipment installed.
and today...
INDUSTRIAL 2-WAY RADIO
MUNICIPAL
POLICE
FIRE DEPTS.
CONSTRUCTION

Matchless Heritage IN COMMUNICATIONS ENGINEERING

From the several companies formed to manufacture Edison's historic electric lamp, G.E. is today a company with 200,000 products . . . engaged in 13 of the 21 basic manufacturing industries. Its tremendous human and material resources are constantly working to give you a better life with new and improved products.

Communications in your business is the outgrowth of many G-E "firsts." Today — using G.E.'s *high-performance, low maintenance* radio units—industry, utilities, and municipal government reap these benefits: instant reliable communication for increased productivity . . . area control . . . citizen protection.

For information write: *General Electric Company, Section 5923, Electronics Park, Syracuse, New York.*

GENERAL ELECTRIC

Get Set to Spring into Action with INDIAN FIRE PUMPS

If you've been under the impression that INDIAN FIRE PUMPS were intended for use only on brush and grass fires you're in for a big surprise. Just read this letter from a user who once thought the same thing:

"I once thought INDIAN FIRE PUMPS had use only where a volunteer department was putting out grass fires. Since including a No. 90 galvanized INDIAN on our apparatus, however, I found that the men would not use any other type of extinguisher.

That led me to buy a number of No. 90 solid brass tank INDIAN FIRE PUMPS and place them on all our equipment. We are most enthusiastic about INDIANS and prefer them to any other hand extinguisher for all class A and small oil fires."

George P. Lasher, Fire Chief

We urge you to make the same test. Put in several INDIAN FIRE PUMPS now and try them out. Convince yourself of their many, many applications. And remember—no chemicals—only clear water.

If you would like a reprint of this ad, just send us a post card. We will mail you our new INDIAN FIRE PUMP catalog, too.

D. B. SMITH & CO.

406 MAIN ST.
UTICA 2, N.Y.

PACIFIC COAST BRANCHES:

Hercules Equipment & Rubber Company, Inc.
435 Brannan Street
San Francisco 7, California

Fred E. Barnett Company
2005 S. E. 8th Ave.
Portland, Oregon

Titan Chain Saws, Inc.
2700 Fourth Avenue South
Seattle, Washington

Ray G. Davis Company
817 East Third Street
Los Angeles, California

Fred E. Barnett Company
600 Spring Street
Klamath Falls, Oregon

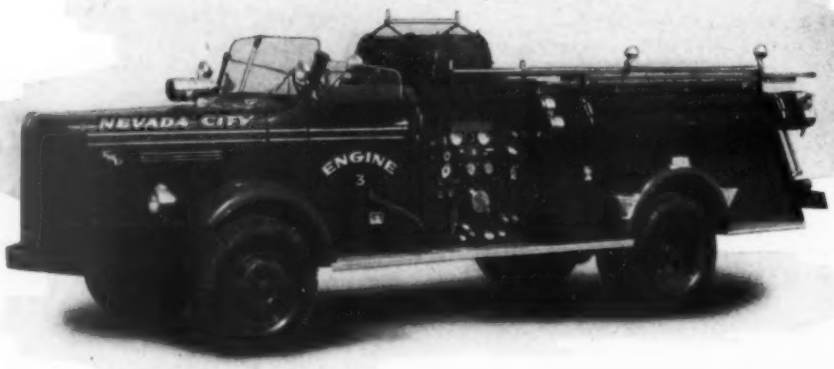
L. M. Curtis & Sons
426 West Third Street South
Salt Lake City, Utah

CANADIAN AGENTS:

Flack Bros. Limited
110 Alexander Street
Vancouver, B. C., Canada

C. E. Hickey & Sons, Ltd.
Hamilton, Canada

Those Who Know Insist On HANNAY HOSE REELS



Nevada City, California, FWD fire engine, made by the Four Wheel Drive Auto Co., Clintonville, Wis., and equipped with the new Hannay Hose Reels.

Check the Superior Advantages

HANNAY
ELECTRIC DRIVE
HOSE REELS

Water Resistant
Vapor Resistant
Explosion-Proof

- ★ Extra strong construction to withstand high pressures.
- ★ Explosion-proof, heavy duty motor protected against fog, foam, fumes and water.
- ★ Sealed push button control.
- ★ Safe rewind speed, always under control.
- ★ Quiet, positive sprocket and chain drive; no gears to shift, no clutch to engage.

The continuing and increasing approval of Hannay Hose Reels by leading manufacturers and major fire departments is sound evidence of their superiority. Progressive fire officials, of large municipal departments and volunteer companies alike, know that when the going is tough there's no time for mechanical upsets . . . and that HANNAY Hose Reels can always be depended upon to do *their* part of the job. Attention to details makes for perfection. Specifying HANNAY Hose Reels is a detail that warrants your fullest consideration.

Ask Your Supplier or Write for Full Details

....LOOK FOR THIS

HANNAY
REG. U.S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

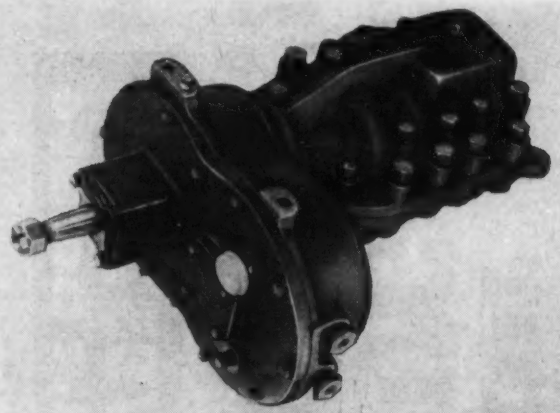
© 1952 C.B.H. & S. Inc.

MANUFACTURERS OF MANUAL AND POWER OPERATED HOSE REELS FOR EVERY PURPOSE

COMMERCIAL Seagrave

DEPENDABLE FIRE PROTECTION AT LOW COST

No reason for your city to be without modern, efficient, dependable fire protection when you can buy the Seagrave Commercial at such an economical price. The saving is made possible by Seagrave using a commercial truck chassis and building on it the Seagrave body complete with Seagrave pump, Seagrave ladders, Seagrave controls, large storage compartments and all other Seagrave fire equipment. Also keep in mind the fact that the Seagrave Commercial contains the same engineering, the same mechanical perfection, the same high quality materials that go into the more expensive Seagrave metropolitan pumpers. So why should your city accept less than a Seagrave? You can have this famous fire apparatus within the limits of your budget.



The Seagrave Commercial may be equipped with the Seagrave High Pressure (fog) Pump, pictured above. Pressures up to 1000 lbs. . . . You also have your choice of the Seagrave Two Stage Parallel Series Centrifugal or the Seagrave Single Stage Pump. All manufactured by Seagrave from fine grained bronze.

THE SEAGRAVE CORPORATION
Columbus, Ohio
Bickle-Seagrave, Ltd.
Woodstock, Ont.

THE GREATEST NAME IN FIRE APPARATUS

for RUGGED DUTY !

MIDWESTERN PROTECTIVE CLOTHING

The overwhelming preference for Midwestern Protective Clothing is the result of outstanding performance when the going is tough and the chips are down. The superior quality, design, fabric texture and many exclusive features found in Mackinaw Coats and other Midwestern garments help increase your department's efficiency and provide extra protection for your men at the scene of the blaze. There is no substitute for the expert workmanship, built-in comfort and longer wear you get by specifying Midwestern.

PROTECTION—COMFORT—SERVICE

You will find the type of fabric exactly suited to your needs in our wide selection of rubber materials. You can absolutely depend on the softness and flexibility of these high grade materials to meet your most exacting requirements for lasting comfort, rugged service and greater efficiency on the job.

For complete information on our full line of firemen's protective clothing, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

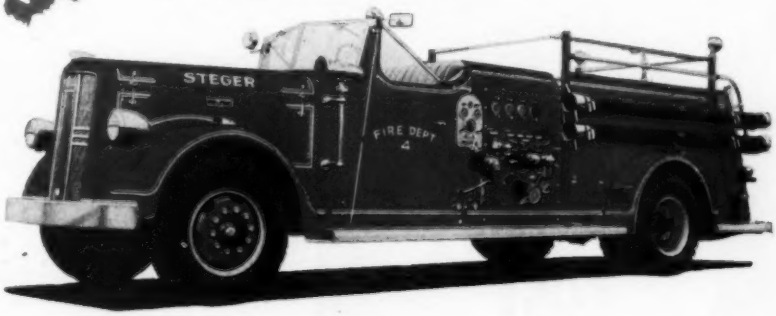
2 Illinois cities choose

WARD LaFRANCE

These new Ward LaFrance Pumpers will shortly see service in Libertyville and Steger, Ill. Why did these mid-western cities turn to Ward LaFrance for new equipment?

The answer is simply this. Over the past 30 years, Ward LaFrance Pumpers have proved their ability to perform under a wide range of fire-fighting conditions.

MODERNIZE YOUR EQUIPMENT Bring your fire-fighting forces up-to-date with new, ruggedly-built Ward LaFrance apparatus. You'll find pumpers in 130, 150, 200 and 240 H.P., ready to deliver the weight-to-horsepower ratio necessary for fast get-aways and hill-climbing. Each Ward LaFrance Pumper is equipped with Waterous split housing pump—surplus gallonage that far exceeds rated capacity — flat horizontal booster tank—exceptional hose capacity —plus other outstanding features.



GET THE FACTS
Send today for new, illustrated bulletin, describing Ward LaFrance Fire Apparatus.

WARD LaFRANCE

TRUCK CORPORATION

Fire Apparatus Manufacturers for over 30 Years

General Office & Factory: Grand Central Avenue, Elmira, N.Y.
Direct Factory Branch: 139th Street and Bruckner Boulevard, New York 54, New York
Export: Ward LaFrance International, Inc., Elmira, N.Y., U.S.A. Cable Address: "Wardtruck"
Mid-Western Representative: M.J. Dalton, 726 Grove Street, Barrington, Ill.

BETTER PROTECTION

astute business executives are constantly proving that

IT PAYS 2 WAYS TO PROTECT PROPERTY

Automatically

LOWER COST

Here is a typical example: Officials of an Eastern industrial concern recently made a study of their protection expense. They were amazed to discover that the cost of patrolling one watchman's route—nights, Saturdays, Sundays, holidays and vacation periods—*was more than $10,000 a year.*

Upon the advice of their insurance broker, they called in an ADT representative to explain the advantages of ADT Automatic Protection. A survey revealed that the firm not only could reduce its protection costs substantially but, in addition, the plant and its continuity of operations would be much better protected.

This same discovery is being made every day by prudent businessmen who are striving to combat today's high costs

Thousands of firms, large and small, now protect their properties with appropriate combinations of ADT Automatic Protection Services: Automatic Fire Alarm, Sprinkler Supervisory and Waterflow Alarm, Burglar Alarm, and Automatic Heating and Industrial Process Supervision.

There's no need to gamble with human frailties when you can protect your property and your profits with systems that stand guard 24 hours a day to detect and report dangerous conditions *automatically.*

May we explain how ADT Automatic Protection can be applied to help you. Telephone the ADT Central Station in your city or write to our New York Executive Offices.

ADT

Controlled Companies of

AMERICAN DISTRICT TELEGRAPH COMPANY

Executive Offices: 155 Sixth Avenue, New York 13, N. Y.

A NATIONWIDE ORGANIZATION

Knock Out FIRES FASTER with

JOHN BEAN *two-fisted* FIRE-FIGHTER

Here's a truck that goes into action power-packed. It incorporates the quick knock-out punch of the famous Bean High-Pressure system and the fire-beating wallop of the new Bean Volume Pump. Both pumps operate together or separately, so you have at your command two lines of fast-striking high pressure fog and 3 lines of slugging volume power. Make sure your community gets all the protection it needs. Investigate this Bean Two-Fisted Fire-Fighter today.

Write for this complete story on the John Bean High-Pressure Fog and Volume Fire-Fighter.

John Bean Division
Dept. 126
Lansing 4, Michigan

•

John Bean Division
P. O. Box 145
San Jose, California

JOHN fmc BEAN

TWO-FISTED FIRE-FIGHTERS

Can be mounted on most standard truck chassis

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

Detroit Fire Dept. Saves 20,000 Miles a Year...

with Motorola 2-Way Radio

BASE STATION

The Detroit Fire Department's radio system includes three base stations in the center of the city—a 250-watt Central Office Unit, a 250-watt transmitter for standby and training purposes, and a 50-watt unit for standby purposes only. All are operated by remote control.

PORTABLE

The Handie-Talkie® radiophone goes anywhere a fireman can go. Lightweight, rugged, it provides instant contact with all other fire fighting units.

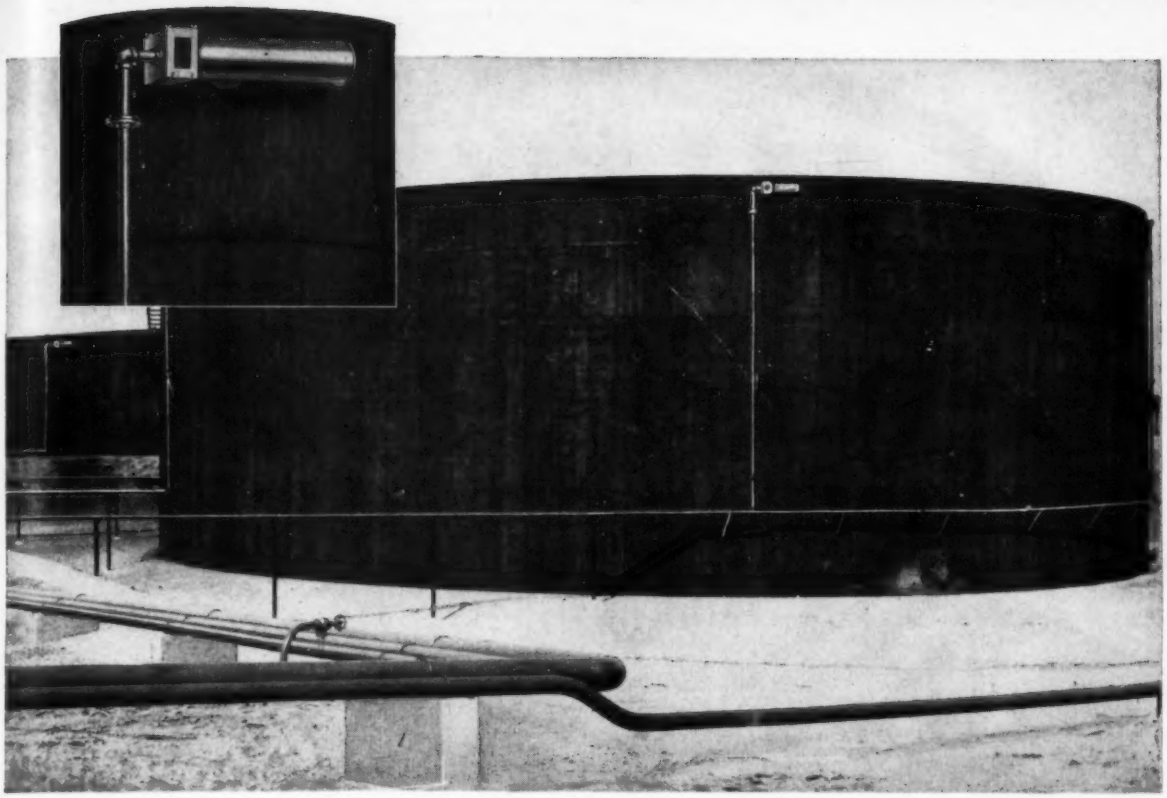
The Mobile Unit is constructed to give dependable communication under all conditions. It's ruggedly built . . . splashproof and weatherproof.

MOBILE

More than 75% of the nation's radio-equipped fire departments use Motorola to cut costs, coordinate action, improve service!

Here's *proof* of Motorola value! From actual mileage records of its 52 engine companies, 7 squads and 30 ladder companies, the Detroit Fire Department knows that it has saved at least 20,000 miles a year with Motorola 2-way radio! These significant savings are based in no small part on the dependable performance and operational value of Motorola equipment. The working superiority and quality engineering features of each Motorola unit produce over-all efficiency and economy. For example—the Sensicon "Permakay" filter saves fifteen nuisance tuning adjustments. Seven other exclusive Motorola features also add to Motorola economy and service. For full details, call your local Motorola engineer, or write Dept. 2-86-**FE**.

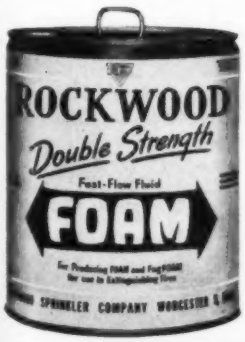
Motorola®
Communications & Electronics, Inc.
A SUBSIDIARY OF MOTOROLA INC.
900 N. Kilbourn Ave., Chicago 51, Illinois
Rogers Majestic Electronics Ltd., Toronto, Canada



Newest, Fastest Oil-Fire Extinguisher!

Rockwood's Double-Barrelled FOAM Maker Chamber Features Impinging Jet Action . . . Cuts Time And Cost Of Fire-Fighting . . . Is Easy To Install And Inspect

In the new Rockwood Double-Barrelled FOAM Maker Chamber, internal impinging jets discharge into two concentric barrels, one within the other. Providing a longer mixing time in a more compact unit, this patented construction dynamically mixes air, water and FOAM liquid — producing a finer bubble structure and a more heat-resistant FOAM blanket that puts out oil fires faster and more economically. Compactness of chamber design and elimination of supporting brackets enable easy installation from the tank's exterior. Nozzle, vapor seal, and air intake screens are readily inspected from the top of the tank. Rockwood Double-Barrelled FOAM Makers are available in a wide range of sizes to meet existing FOAM standards with maximum efficiency and economy.



Rockwood's new Double Strength Foam puts out fires in flammable liquids faster and at lower cost. Three parts FOAM liquid mixed with 97 parts water form a smothering foam blanket which quickly reseals if broken. Double Strength FOAM liquid is more fluid, faster spreading and flows freely at sub-zero temperatures (—15° F). It's quicker to put into action, covers burning surfaces faster, seals off combustible vapors completely and flows freely around obstructions. This foam blanket has proved its ability to extinguish large spill fires in gasoline with maximum speed and safety to firemen.

Rockwood's Custom Engineered Proportioning Systems are used to proportion the necessary discharge through FOAM nozzles. Spill fires in an oil refinery or fires in oil storage tanks require special proportioning systems. Custom engineered proportioning systems to meet these requirements are a Rockwood specialty.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

ROCKWOOD SPRINKLER COMPANY
54 HARLOW STREET
WORCESTER 5, MASS.

Please send me more complete information on the new Rockwood Foam Maker and Chamber explaining in detail its operation and application.

Name.....

Title.....

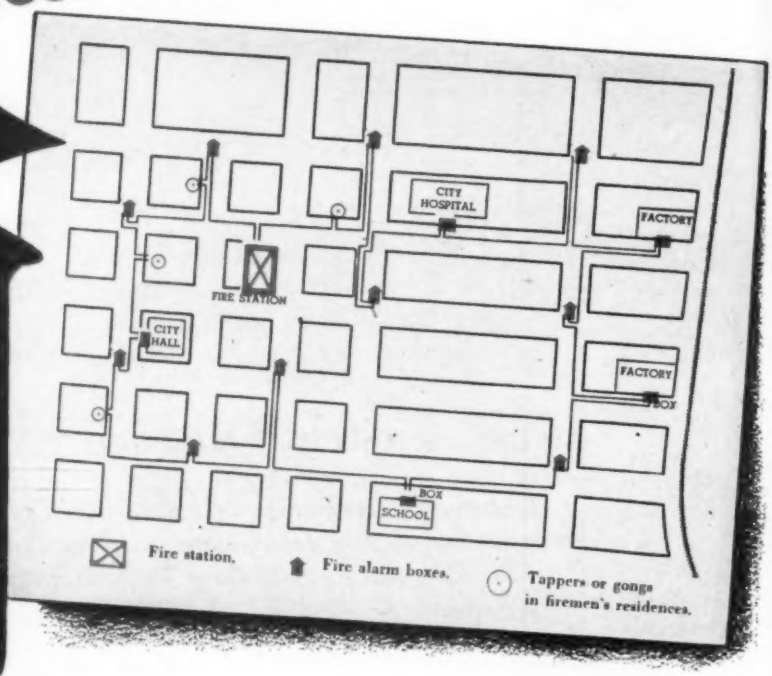
Company.....

Street.....

City.....

Zone..... State.....

A Big City Fire Alarm Box System for the Smaller Community —at a cost within reason



The fire alarm box system gives you positive, *instant* communication with the

FIRE DEPARTMENT
FIRE CHIEF • VOLUNTEERS
RESCUE SERVICE

— announcing the *location* of the fire when the fire alarm box is pulled.

Your community can now have all the advantages of a big city fire alarm box system. In most cases the installation will give extra advantages, frequently contributing to a reduction in insurance premiums. As the community expands, your fire alarm box system need not become obsolete. It can be extended on a circuit-by-circuit basis, to avoid a heavy investment in any one year.

Remember that every conflagration *starts* as a small fire. Keep small fires small — the fire alarm box provides instant communication for automatic organization of your fire defenses at the *source of the fire.*

Last year's fire loss amounted to over $730,000,000, most of it needless waste.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASSACHUSETTS
In Canada: Northern Electric Company, Ltd., Belleville, Ontario

GAMEWELL

THE BOX IS POSITIVE
Reduces Human Error

FEBRUARY, 1953

FIRE ENGINEERING

VOL. 106, NO. 2

With the Editor

Revised Thinking Necessary? The New Year saw the release of a report on Civil Defense by nine Eastern Collegiate institutions grouped under the title of Associated Universities, Inc. (which operates the Brookhaven, L. I. National Laboratories for the Atomic Energy Commission). The document, which won wide publicity, may not please all Civil Defense personnel but it may prove a healthy hypodermic for the debilitating anemia that is slowly sapping that branch of the Government.

We have not read the full report, but have studied the summary release and it is this upon which we speak, because it more or less confirms much of our thinking, and our writing, on this subject.

From the very beginning of civilian defense, before War II, in fact, we have preached the importance of setting up adequate Civil Defense against enemy attack and, further, that to be effective, such Civil Defense must be based upon and built around the regularly established municipal emergency services, including fire departments, large and small.

If we are to judge by all the available evidence, including the statement of the expefts who prepared this Report, that "blast and fire are the two most spectacular effects of atom bomb bursts," it logically follows that those forces which must bear the brunt of defense against "blast and fire" should receive due recognition and support of Civil Defense authorities. When you read about Civil Defense tests, and listen in on meetings of various C.D. personnel, and study C.D. programs, you find that fire defense frequently does not receive the prominence it deserves.

We say this with no discredit to medical, evacuation, welfare and other Civil Defense services. Nor do we wish to belittle the Fire Division of the Federal Civil Defense Administration, under Kyle Laughlin, which is waging a splendid battle to give the nation's fire service its just due in the C.D. picture, and to arm and equip it accordingly.

The Report criticizes C.D. and AEC authorities for not making available to those who would head up fire defense the information which is vital to proper planning. With regard to fires, the Report declares there is reason to believe that the official conclusions on the unliklihood of primary fires are wrong; "in which case," the Report states, "present fire fighting plans must be drastically revised."

It hardly takes this Report to confirm what most metropolitan fire chiefs have known: that there is a dearth of sound information available to fire fighters on the control of wartime primary fires (conflagrations-plus) such as an atomic attack might develop. Despite the data that have come out of the findings of the Strategic Bombing Survey and the conclusions reached by some authorities at home and abroad, there remains confusion over many details of what constitutes *adequate* defense against atomic or other enemy attacks that may conceivably eventuate with cataclysmic suddenness.

This confusion is furthered by those fire fighters who say in effect "Oh, atomic fire is no different than any other conflagration; we may need a little extra help, but we'll lick it just like we've licked other big blazes." It is evidenced too by failure to understand and appreciate the magnitude of the control and suppression job that the fire service will face and the extent of the defense that must be set up, and the entirely new concept of the multiple company operations that must be learned, and the revised thinking and planning that should result. Confusion is not all on the side of the Civil Defense! Well might the FCDA say to the fire service: "If you gentlemen cannot agree among yourselves on what constitutes adequate fire 'defense', how do you expect *us* to provide you the requisite facilities for that defense?"

Highlights on this important question of defense-in-force against major fire disaster are given in a study of multiple company operations in this issue of FIRE ENGINEERING. It marks the first step in an analysis of what is being done, and what should be done to meet some of the criticisms of the Universities' Report, "Operations East River," and the challenge posed by modern atomic fire attack.

Fred Shepard

Major Elements of Multiple Company Operations

Some Aspects of a Little Discussed Fundamental, Based Upon Studies of War and Peacetime Fire Disasters

By ROI B. WOOLLEY

Author's Note: Do the mounting conflagration losses and the threat of possible enemy attack upon this nation call for revision of multiple company operations, as the American Fire Service has long practiced them? Many fire engineers believe so.

Through the years there has been little change in the strategy and techniques of meeting major fire disasters. And oddly enough, in all the bibliography of information on fire suppression and fire department operations there has been little comprehensive data devoted exclusively to multiple company operations, either as practiced by individual metropolitan fire departments, or as conducted by groups of fire forces in what is termed mutual aid. Furthermore, as is pointed out in the editorial in this issue, there is general lack of agreement on what constitutes adequate defense against conflagrations such as may eventuate from an atomic bomb attack.

Municipal fire departments having "automatic" response procedures expect, generally, to combat such possible conflagrations as they have fought multiple alarm fires in the past, calling in outside aid if, and when, required. But today, only a few "target cities" have made sincere attempts to analyze the problem of applying past and present multiple company procedures and practices to meeting the threat of possible atomic conflagration. Fewer still have conducted any real tests or experiments in this respect.

The author has tried to evaluate some of the major problems of multiple company response and operations, and what has thus far been accomplished, in the light of lessons of World War II and experience gleaned from past major disasters in this country, with particular emphasis on the movement-in-force of units of the fire service rather than on fire extinguishing operations. In the attempt, he has drawn freely upon the statewide exercises and experiments conducted during the past 18 months by New York State's Civil Defense Commission and the Bureau of Fire, Division of Safety of that State. Acknowledgement is also made of the joint operations of the New York Fire Department, and the fire forces of suburban counties in recent large scale mutual aid tests.

THIS is a study of multiple company operations, primarily as they relate to mutual aid. Certain elements of the thesis developed and the conclusions reached in this text, however, will be found to apply to the multiple company operations of single municipal fire departments in time of major fires or other large emergencies.

Mutual aid may require the participation of many fire departments and many fire companies and, as such, it is essentially a multiple company undertaking.

If this thinking is logical, and there is some similarity between the multiple company operations conducted by any large municipality and mutual aid multiple company operations conducted over a broad area, the consideration of one involves to some extent the study of the other.

To carry the analogy further, it is generally agreed that the strategy of fire attack and defense are basically the same, with one possible exception, in combatting and controlling a one-alarm "working fire" and a multiple-alarm operation. That single difference is one of scope and detail, or in a single word—magnitude.

Considering mutual aid multiple company operations, therefore, does not necessarily call for an entirely new approach to the problems of fire control, except in extent. Obviously, the greater the emergency, whether fire, flood, tornado, or train wreck, the more extensive will be the multiple operations and the greater and more complicated the problems for the forces involved.

Whether a fire be insignificant or of conflagration proportions, these basic principles of the fire service will persist: First locate, then confine, and extinguish it. The problem of accomplishing those objectives, particularly the last two, in any extended operation, calls for the mobilization, deployment and operation of multiple units. And it is the purpose of this study to review these factors, especially in the light of enemy attacks of World War II and the possibility of an atomic attack upon our country—also giving consideration to certain large scale disasters that have occurred during the past decade, and major Civil Defense test exercises that have been held in several parts of the nation during the past two years.

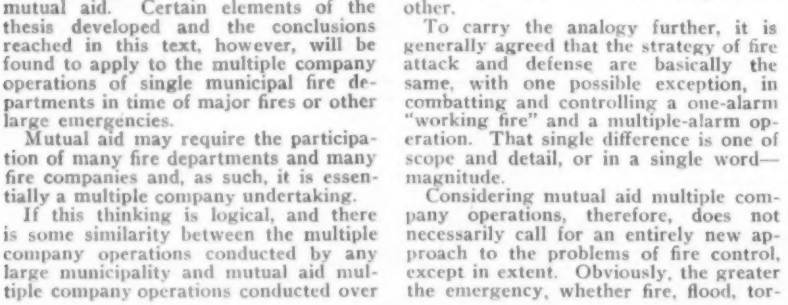


Photo by James Heffernan

Defense against conflagrations calls for taking advantage of natural fire barriers and massing protective coverage at "weak spots" in the defense line, as these New York fire fighters are doing at borough-alarm Brooklyn blaze.

Some Basic Factors of Multiple Company Operation

Size up—Reverting to the first principles of fire attack, control, and defense in major or minor operations, perhaps the most important element is the "size-up." A review of noteworthy conflagrations, and this includes wartime as well as peacetime incidents, indicates that all too often prompt and thorough size-up was lacking. The result was a failure to realize and appreciate the extent of the crises, the involvement, the immediate and potential hazards to be faced, and the appropriate measures to be taken to meet the situation, as it existed, and as it threatened to develop.

One result of this failure to appreciate the real and potential crisis was delay in calling for additional reinforcements. The old axiom that it is better to call for help that you might not need than

Photo by James Heffernan

Barrage of heavy streams along Tinton Street, Bronx, during test December 13, 1952. In effect, they are covering advanced forces operating nearer ground zero, to permit their retreat with equipment, whereupon this line would become the first line of defense.

not to call for help that you may need still applies to fire control.

Aside from the personal qualifications, which enable a fire officer to determine when he needs help, and how much help he is going to require, a fundamental requisite is to know what resources of men and equipment are available, where they are, and how they can best be procured and put to work.

Inventory—This calls for an inventory of resources of one kind or another. Fire fighting facilities are all catalogued and known to the command in individual municipal departments, and there is a predetermined procedure for mobilizing them. But in most cases the information stops right there. There is little or no knowledge of, and no complete inventory of resources and reserves that may be available from *outside*, i.e., from neighboring cities, towns, villages and areas such as counties or states. Obviously there can be no successful multiple company operations on a grand scale where there is lack of such knowledge, and of how to bring these reserves into action in time of need.

A study of outstanding disasters indicates that mutual aid sometimes calls for the mass mobilizing of specialized apparatus and equipment, such as rescue units, (witness the several suburban New York railroad wrecks and the Harrow-Wealdston catastrophe in Britain); lighting units; respiratory breathing apparatus (witness the Holland Tunnel disaster); and for certain types of apparatus, such as water tenders and tankers (witness the New England forest fire). Failure of forces making the initial attack, or setting up the defenses, to have adequate heavy-duty equipment such as large hose, deluge sets, turret and ladder pipes, or even the fittings to make fullest use of these resources, has permitted many a one-alarm blaze to develop into a multiple-alarm conflagration. Therefore inventories should not be restricted to merely listing pumpers or other major fire fighting facilities.

Inventories should also include manpower. Multiple company operations frequently necessitate rotation of personnel; this requires reserves of fire fighters of all ranks and may call for specialists, such personnel to keep mechanical equipment functioning; to maintain communications, and to handle the multitude of other details involved in complicated multiple company activities. In this connection it is surprising to note that in a number of large cities, no comprehensive procedures for calling the off-shift forces have been adopted.

Still another detail which should be inventoried is water supply. Where water supplies of adjoining communities are interconnected or can be by means of gates, or hydrant-to-hydrant, the locations and procedures for prompt tie-in of the services should not be left to chance, but should be known to the fire forces of the area.

Not all municipal fire departments, even in target areas, have inventoried all the emergency and auxiliary water supplies that might be available in time of disaster, such as where normal systems fail, for any reason. Even fewer departments have made any comprehensive tests, using all types of such secondary supplies.

One other factor involving inventory: A universal omission in many inventories of reserves are those of fuel, first aid and medical. Metropolitan fire departments usually have their own medical staff and can handle normal first-aid within their own communities; but in time of major disaster, additional aid may be needed—lots of it. Where, and how to obtain it? The same with fuel and lubricants for the working apparatus. The disaster records indicate a woeful lack of knowledge of where and how to secure these critical facilities without delay. The apparatus that must be driven many miles, much of it on low gear, may be incapable of sustained pumping operations after it has gone into action on the fire ground, due to exhaustion of its fuel or to the fact that the unit itself was not suited to the demands made upon it, and should not have been summoned in the first place.

Command—A major weakness in multiple company operations is lack of centralized command. This is not as prevalent perhaps, in intra-department actions as it is in mutual aid operations involving a number of different individual departments and units. This was manifest in meeting the onslaught of enemy fires in Britain, Germany and Japan, even though operations were largely under control of the military, and fire fighters were supposed to operate under rigid discipline and adherence to regulations. The history of these incidents attest the difficulty of establishing command and keeping it sufficiently flexible to channel information and orders, as the scope of the fire incident widened and increased.

Failure of command may be due to many causes, human and mechanical. Notable contributing factors are absence of, or rupture of communications; lack of line organization and of preplanning (particularly failure to establish a chain of command to provide for absence of or loss of superiors.)

Confusion of command is more common to Civil Defense operations than it

Photo by James Heffernan

Multiple company operations usually call for heavy duty equipment. To "surround," confine and control a conflagration requires ample reserves of apparatus and manpower. Here, New York fire fighters on a Borough Call assignment fight to prevent extension of a block-long blaze.

Control centers are essential in multiple company movement. Radio, telephone, teletype, all were used by the Westchester Fire Control Center to direct over 75 fire units and 750 firemen responding and covering in December 13 test. Left: Extra switchboard operators at work. Center: Main control desk, radio consoles and map room in rear. Right: Improvised radio receiver and transmitter handled overload of messages.

is to multiple company operations involving organized municipal and related fire forces. In both instances, however, it can be brought about by the intrusion of well-meaning but untrained, inexperienced and excitable civic or other "top brass."

Commenting on this, the head of a state agency which has conducted more large scale mutual and multiple company operations than any other, recently said "Our . . . tests . . . have failed to establish a sound method of command in stricken areas. In each test the free movement of fire equipment was materially delayed and the command at the scene of the operations generally lost."

Capable and experienced as our American professional fire chiefs are, it should be remembered that not one of them has had actually to come to grips, firsthand, with wholesale catastrophe such as was encountered by the commands of fire forces in Europe and elsewhere during the last war. Notwithstanding this, many students of the problem believe that in any emergency created by enemy atomic or other major attack on this country, command if kept within the fire service, that is, leaving to the fire service rather than some other agency the task of control and extinguishment, would function more efficiently than was the case in Europe, notwithstanding the latter's fire force military training and preparation. The municipal fire chief of any of our class A cities is called upon to combat more fires, and more large fires, annually than the head of any corresponding European or other foreign commonwealth fireforce. His experience, today, is buttressed by our improved facilities of fire communications, transportation, feasible inter-connection of water systems, and development of emergency water supplies. Disaster and catastrophe plans are in effect generally throughout our nation; mutual aid is today an accepted principle of meeting major emergencies in this country.

Command which is responsible for ordering and directing the response of facilities necessary for fire defense and attack-in-strength must be prepared for certain other contingencies. One is that responding forces may have to operate under the direction of inexperienced, untrained officers, little versed in multiple company movements and operations, and the tendency of responding forces to "go it on their own." Another is the confusion that will arise where there has been no pre-disaster planning and preparation.

Photo by J. P. Batchelor

For the first time portable field telephones were used, along with "walkie-talkies" to direct large scale multiple company operations. Shown is fireman receiving orders at a group command post in Pelham Manor area during December 13 tests. Phone network tied in GHQ, area command and numerous group and relay operations.

History tells that most great fire disasters have not been the result of a single factor, or failure. They have been due, for the most part, to the accumulation of *a number of things that went wrong.* Command cannot anticipate all eventualities; the average chief, fighting a multiple-alarm fire, knows how often the unexpected may happen. The possibilities of these failures can at least be partially eliminated by insistence of command upon pre-disaster planning.

Fire is unpredictable; it rarely if ever strikes and develops according to plan. Nor can it always be fought and subdued according to plan. But, experienced officers believe this is no excuse for not having some pre-determined plan of combating it. Otherwise why do city departments establish the running cards, and response assignments to be prepared for multiple alarm blazes.

Multiple company operations call for "multiple commanders" but not necessarily multiple *command.* There must be a commander-in-chief. But there must also be subordinate and associate command, to direct actions in designated areas, or specific undertakings in the over-all operation. Large-scale operations call for someone to concentrate on the major issues and objectives; to maintain a supervisory eye on the whole enterprise, delegating details to others. Some authority must do the leading, directing and the coordinating. And that introduces another factor:

The G.H.Q.—Command is complicated where it is spread all over the place, or where the "commander" cannot be located and his orders and instructions received. The greater the magnitude of the operation, the more important to have some centralized general headquarters to which information can be conveyed, and through which it and instructions can be funneled to operate and support forces.

Company or convoy commanders reporting in on multiple calls cannot be blamed for "going it on their own," or making serious errors in getting into action, if they cannot locate the field G.H.Q. In city operations, a fire chief and his aides have a mental picture of about how the forces responding on multiple alarms will roll in, that is, the general directions and routes of travel. Furthermore, it is the procedure for responding units to hold up and standfast on the periphery of the scene of operations, while the officers in charge of those units seek out the command post for instructions on deployment. But

in conflagrations of magnitude, with help coming from over a wide area, according to no pre-arranged assignments, and with the possibility of normal routes of travel blocked or impassable, no commander can foretell, or even anticipate the arrival of aiding forces. This develops situations which complicate setting up effective defense or attack lines.

In a recent fire defense test involving nearly 100 fire companies, an entire convoy of 10 units, whose leader could not locate the command, or field GHQ, piloted his entire group into an area already overcrowded with apparatus, with resultant loss of the services of the group, and general confusion in the segment, until the misdirected force could be extricated.

Having a GHQ does not necessarily mean that the chief-in-command must be rooted to the spot, or that he cannot personally size-up the situation on every front if means of travel and communications are available. But it does mean that someone in authority able to receive, digest and act upon the information that filters to the GHQ, be at the command post to act. With "walkie talkie" radio and modern portable field telephone systems, the commander-in-chief can be mobile and yet remain in close contact with his base, and his aides.

Communications: Almost every detail of multiple company operations depends in some measure upon communications of one kind or another. Most serious weaknesses in this phase of fire suppression have occurred in on-the-fire-ground operations. Modern fire alarm systems can be depended upon to summon the municipal fire department to the scene of an emergency; but once on the fire ground, adequate communication facilities have not always been so available. This has handicapped the procedure for calling for aid and, of equal importance, for putting the aiding forces effectively to work.

In the city, the commanding fire officer normally can rely upon both wire and wireless facilities for calling for help and directing its disposition. The advent of fire department short wave radio is rapidly plugging the most serious gap that previously existed in this essential of multiple company operations. Today's radio-equipped fire force is never lost to its command, and with the aid of portable-pack sets to help direct actions in the field, no matter whether the actions take place within a political subdivision or in the wide open spaces of the country, the chief of operations need never be out of touch on the fire ground.

Even with these improvements, however, a large-scale enemy attack, such as wrecked cities in World War II, if applied to most American cities, might find the fire forces short of communications. Certainly all wire communications facilities in the affected area would be at least partially disabled, leaving only radio. This, too, could fail if the power sources gave out.

The Control Center—Experience has demonstrated that communications *control* is essential to effective multiple company operations. This is especially true in directing mass mobilization and movement of forces. Tests have shown that at times there can be such a thing as *too many* communications facilities. In some New York State Civil Defense exercises, for example, the problem was not the *lack* of communications means, but of making fullest use of the many that were available, such as radio systems used by public utilities, public works, transportation (including taxis), as well as police and fire. If the fire service must share radio frequencies, for example, with law-and-order or other services, and the peak of communications traffic in each service occurs coincidentally, as it must in a major disaster, fire force operations cannot help but be adversely affected by the resulting confusion. Too many, and jumbled communications facilities are almost as bad as not enough facilities. Thus far, one has found all the answers to the problem of providing adequate communicaitons to meet the needs of multiple company operations in major disasters of all kinds. Nevertheless, we are farther advanced than we were during World War II raids. The nearest solution of this problem appears to be the "fire control center," such as being installed in New York and other States, primarily to direct mutual aid operations.

These control centers form the heart of area communications systems. In some cases they handle the entire task of receiving calls and dispatching fire forces of the communities within the area on first alarms, as well as mutual aid calls, similar to a municipal fire alarm office. In others, they may operate under direction of police or sheriff's office, or some other agency.

Where mutual aid is well organized on an intra-and inter-county basis, any municipality or district can quickly put in motion disaster aid plans, of almost any magnitude. The idea communication hook-up, of course, is the radio network system reserved for the fire service in the area covered by the fire control center, and a radio tie-in with control centers of adjacent counties or other areas. Such a web of communication, with necessary links to Civil Defense and other agencies within the areas, can effectively initiate multiple company actions at the call of any area or local command.

Where there are municipal fire alarm bureaus with round-the-clock staffs, communications control can most advantageously center in these well staffed and equipped alarm bureaus. Two things are essential in addition to the mechanical assets: 24-hour-communications supervision, and clearly defined responsibility for the operation of the control center.

A gratifying result of some recent

Photo by J. P. Batchelor

Top: Part of 750 fire fighters fed in rear area during New York City-Westchester County mutual aid test of December 13, 1952. Sustained operations require rotating and provisioning firemen and extra clothing (a problem in winter). Botton: Rolling canteens supplied "hot coffee—and" to working crews in advanced fire ground.

multiple company test exercises has been the disclosure that volunteer fire departments can and will accept the supervision and control of the municipal control center or fire alarm bureau of paid fire departments, in multiple company mutual aid operations.

According to B. Richter Townsend, Chief, Bureau of Fire, Division of Safety, New York State: "The control of fire equipment has been judged to operate efficiently through a county fire control with the director and chief of the fire service of each jurisdiction. It has also been judged to be the best policy not to permit the free movement of personnel and equipment from one jurisdiction to another, *unless such movement is in accordance with a pre-arranged plan of automobile AID and unless such movement within a county is coordinated through the county fire control.*"

Coverage—Multiple company operations *per se* are not limited to the fireground action. For every company or unit called into the battle on the fire-front, it may be necessary to shift or otherwise enlist the aid of another company or unit behind the front, in order to furnish protection against fire in areas left uncovered by the response of the aiding forces.

Organizing and effectuating this protective coverage is the task of top command and should be the shared responsibility of the fire control center, working with the various fire headquarters. No fire officer confronted with a serious conflagration or other emergency, which is going to require reinforcements of multiple-alarm proportions, should have to concern himself with details of who is going to relocate fire forces of the area to cover his unprotected districts while his forces are at the front, nor should he have to worry about where he is going to get and mobilize the forces to help him construct a secondary containment or defense lines, or to replace lost equipment and manpower.

Photo by James Hofferman

Expect the "unexpected" in area-multiple-company operations. Here a New York City auxiliary pumper (No. 19) is mired during defense test of December 13, 1952. Class A pumpers, like good firemen, are not "expendable"!

It may be true, as some chiefs believe, that mutual aid response and coverage cannot be automatic, that is, it cannot be predicated on the same systematic, scheduled, automatic multiple alarm procedures as adopted by large city fire departments, which operate on pre-determined assignments. Other fire protection engineers, however, strongly advocate having predetermined schedules of response and coverage for all mutual aid plans—and making these as nearly automatic as possible.

With an inventory to tell what can be had, and where, a fire control center to maintain that inventory, and from which calls for additional help can be cleared, and the resources dispatched, shuffled and relocated as necessity dictates, there should be no reason for leaving any critical areas unprotected no matter how extensive or critical the emergency.

Facilitate Response

The advent of motorized fire apparatus has greatly facilitated multiple company operations through speeding response. In Britain, fire units were driven great distances to meet threats of aerial attack. Tests conducted in New York State demonstrated that modern fire apparatus could travel 125 miles or more in convoy, through normal traffic, on mutual aid calls. Further, that the apparatus could go immediately into action, operate at pumping capacity, and make the return trip of another 125 miles, or more, without untoward incident.

Under actual disaster conditions however, the free movement of fire forces is by no means so simple. The greater and more publicized the catastrophe, the larger the crowds of the curious, who clutter the thoroughfares to impede and jeopardize response of aiding units. This was experienced in the large New England forest fire; in the several airplane disasters at Elizabeth, N. J.; at the South Amboy explosion, and in countless other disasters.

Road and highways must be kept cleared for incoming help in large scale multiple company operations. This calls for prompt, efficient cooperation of police and fire patrols, aided by any and all trained personnel, such as National Guard, Civil Defense and other agencies. Road clearance and policing of highways cannot be left to fire fighters in such operations.

Above all, there should be someone in authority to coordinate the details of clearing approaches to the scene of the incident, and ridding the fireground of traffic. Vehicles in the path of advancing fires should be removed, not always an easy task in congested city streets. The fire chief has all he can do to mobilize and deploy his fire control forces

(*Continued on page* 156)

Photo by J. P. Batchelor

Section of the multiple-operation "battle line" at New York-Westchester tests, showing heavy stream barrage erected to cover critical gas main (rising 125 feet over creek). Rear or front-end suctions would have permitted more pumpers to draft at bulkhead.

Arson Investigation

1 (continued). Kinds of Arson; Pyromania; Juvenile Fire Setting, Sabotage

By BERNARD W. MULCAHY
Chief, Fire Prevention Bureau, Cleveland, Ohio

The Neurotic Personality

The type of personality most prone to set fires is the neurotic. These individuals with propensities for incendiarism outdistance all other fire setters in the number of fires set deliberately and in their motives for starting fires. The term neurotic is a dignified synonym for nervous. However, most people suffering from a neurosis are actually those who have a difficult time in controlling their sexual instinct. The drive for procreation is the strongest of human emotions. However, civilization has thrown up a number of obstacles that must be overcome before its fulfillment. When resistance is placed in the way of an easy, direct satisfaction of a primitive instinct, this drive can only be modified to meet the demand of society with painful difficulties. For the normal person, it is usually settled by marriage and a more or less happy normal life. However, the neurotic personality is torn between irreconcilable tendencies and the demands of civilization. Many of them adjust their sexual instincts in an abnormal way. The many forms which their sexual emotions take would carry us far afield, and do not belong in an article on Arson Investigation. Suffice to say, that these sexual deviates play a big part in incendiary fires.

Classifications of the neurotic personalities are hopelessly confused, and to attempt to describe in detail each explicit type would require a book. For the purpose of helping the arson investigator, we shall place these persons in three main categories. These are the hysterical, the neurasthenic and the psychasthenic. We must also include the alcoholics, drug addicts and the epileptics.

Legally, the term insane is not applicable to most neurotics. In other words, people suffering from a neurosis are not legally insane and are held responsible for their actions under the law. The legal problem of responsibility involves the question of whether the individual knows the difference between right and wrong. Neurotics usually know that their delinquencies are a violation of law. Therefore, according to the law, all persons who set fires, other than children, idiots or those declared legally insane, are responsible and must be punished.

Most people suffering from a neurosis, while they have such emotional symptoms as fears, doubts, anxieties, compulsions and obsessions. are not insane in the legal sense.

Such specific phobias, as a compulsion to set fires, are common. Fire department statistics indicate that it is neurotics, rather than the legally insane, that are responsible for most incendiary fires of this type. Therefore it is good practice, when investigating an incendiary fire for which no other motive can be found, to suspect that a sexual deviate or a neurotic person may be responsible. This is especially true when there is a series of fires in the same vicinity, and all evidence points to incendiarism.

Juvenile Incendiaries

Another group of fire setters that can be grouped in the category of irresponsible persons are the juveniles and children. Since the close of World War II, children and youths are responsible for many such serious deliquencies as burglary, robbery, homicide, brutal assaults and arson.

The seriousness of such crimes cannot be measured in the annual loss of some billions of dollars alone, but in the large numbers of potential criminals which are being added to our ever-growing list of law breakers. As most criminals begin their career of crime before reaching maturity, the increasing serious violations of law by juveniles is a special problem, which menaces the foundations of our society. It is well known, that these local street gangs are schools of crime.

Poor housing conditions and uncongenial home life result in the children using the streets as their playground, with the almost invariable association with bad companions. This often leads to crime at an early age. Also, it is common knowledge that there has been a relaxation of discipline standards in the home and, in this connection, it may be said that liberty has been taken for license in many cases. Also, many authorities believe that much of the juvenile delinquency can be traced to crimes suggested by newspaper reports, motion pictures, radio, television and comic books; that in presenting certain immoral types of conduct, they tend to make heroes of criminals.

How to prevent this growing incidence of juvenile delinquency is one of the pressing problems which society must solve, if we are to continue to grow and prosper as a nation. We mention it here, only to bring to the arson investigator's attention the growing number of set fires by juveniles. From the investigators reports in Cleveland, we are of the opinion that much of the queerness and misbehavior of this group stems from lack of home supervision and from the mischievous spirit of youth seeking a thrill. The following case history will illustrate the typical fire set by juveniles:

Since January 1, 1951, we have had sixty-three juveniles involved in the setting of fires. Most of these fires were of a trivial nature. However, a few of them involved considerable loss. One of them, which occurred on February 28, 1951, destroyed a brick commercial building at 12201-12219 Euclid Avenue. This fire necessitated a third alarm.

The fire was started by three boys, all ten years of age, who ignited a stick from a bonfire and shoved it into a ventilator, starting a fire in a store which eventually destroyed the building, with a loss of over sixty thousand dollars. These boys were apprehended by members of the Arson Squad and placed in the Detention Home.

They were turned over to Juvenile Court, who placed them on probation and had them transferred to a special school for delinquent boys.

Schools are the favorite target for juvenile incendiaries.

Sabotage Fires

Sabotage is a word taken from the French language and has come to mean any malicious destruction of property, for the purpose of crippling the production of an industrial concern, or intimidating the owners. Sabotage is a weapon of war when employed by foreign powers; it is used in labor disputes and has been the principle means of intimidating victims of the gangster and racketeer. Arson is frequently the tool of the saboteur. Fire started by sabotage is usually so carefully planned that the fire department officer in many cases does not suspect the true nature of its origin. For this reason, arson investigators must be alert and careful in investigating undetermined fires, in order to avoid being misled.

Sabotage is not a new device in war, and the use of arson, explosives or any conceivable method to slow up or stop war production or interrupt normal functions has been used in all modern conflicts. The racketeers, as they are called, use stink bombs, dynamiters, sluggers, and arsonists to extort money from legitimate business establishments. As a matter of fact, the "Protection Racket" is responsible for a great many undetermined and incendiary fires. Some labor unions have resorted to dynamiting and arson to gain their ends. The Kefauver Committee found that the Crime Syndicate, operated by these racketeers, have muscled their way into over seventeen different types of legitimate businesses by various means of intimidation, including arson.

Forms of Sabotage

There are several means of sabotage, they are:

1) By fire.
2) By explosion.
3) By mechanical means.

Of these, the method preferred by the saboteur is fire. The destruction which follows tends to destroy all evidence that the cause of the fire was sabotage. In starting these fires, you may be sure, the saboteurs will not do anything that might throw suspicion upon themselves. They will use chemicals that leave no tell-tale evidence, and will usually be miles from the scene when the fire occurs. The value of detecting evidence of arson in fires started for the purpose of sabotage cannot be over-emphasized.

In time of war, the main source of sabotage fires will come from the enemy or enemy sympathizers. We are at present engaged in a huge defense program, to prepare to withstand any further aggression on the part of Russia. Therefore, we believe, that the main source of sabotage fires will be those influenced by communists or fellow travelers. This threat is a real hazard, and demonstrates the need of clear thinking and thorough investigation on the part of those responsible in the event of a fire, in a defense industry.

Investigation of these fires must be started immediately. While there may not be any direct evidence to show that the fire was set, the investigator may find indirect evidence such as damaged or closed valves controlling the water supply, damaged fire hose, or fire extinguishers rendered ineffective, sprinkler heads tampered with, so that they do not fuse properly, and damage to the fire alarm system, so as to cause a delayed alarm. Devices for starting fires have always been in high favor with saboteurs. All firemen should be alert to detect any peculiar burning or charring, not explainable by natural circumstances. Where there are any grounds for suspicion, the debris and charred wood should be sent to the laboratory for a chemical analysis, to determine if any incendiary chemicals were used.

Explosives

The use of explosives is also a tool of the saboteur. The time bomb is their favorite device, and there are many variations of this infernal machine. They are smuggled into a plant, camouflaged to represent some harmless articles of everyday use, and their presence is not detected until the explosion occurs. In many cases, fire follows the explosion, and firemen are called to the scene.

Where an explosion occurs, firemen should be able to determine the nature of the explosive responsible, so that they may rule out gas, flammable liquids, dust, or anything that could have been in the establishment as an article of regular use. This can be done by observing the destruction caused by the force of the blast.

Gasoline, natural gas, dust and similar explosions, produce a slow pressure wave within the building, that results in a collapse, rather than the building being torn apart. Natural gas, being lighter than air as a rule, causes damage on the upper floors of the building or high against the ceiling. Gasoline and other flammable liquids produce their effects low, and fire usually follows the explosion.

Where a bomb or other explosive is used in sabotage, the investigator can determine the type of explosive used by examining in its effects. In considering explosives, he must distinguish whether a high explosive, such as T.N.T., dynamite, nitro-glycerine, etc., or a low type of explosive, such as gunpowder, was used in the explosion.

Explosives such as dynamite, nitroglycerine, T.N.T., or picric acid are known technically as high explosives. Their effect is detonating, shattering or cutting. This type of explosive produces a shock wave, and need not be confined to be destructive. Explosives which contain their own oxygen and depend upon the burning of one particle setting off the next, are propellants, and as the explosion is of a relatively low order, it produces a pressure effect by the expansion of gases generated, pushing everying before it.

Low type explosives are seldom used by the saboteur because to be effective, they must be confined. Domestic explosions from natural gas, gasoline, dust or pressure vessels are usually poor tools for the saboteur and, to be of value, must start an intensive fire. All of these types of explosions produce a slow pressure wave and the blast itself seldom is too damaging.

To be of any real value, the damage caused by an explosion must be correctly interpreted, and as soon as an investigator starts guessing on the evidence, it is time for him to seek the help of experts. Many explosives will leave an odor which lingers for a long time. If the investigator is familiar with the distinctive smell of the gases left by various types of explosives, it will help immensely.

The police and fire departments are usually called upon the discovery of an unexploded or suspected bomb. In such cases their first duty is to protect the life of the occupants and the public. Their second duty is the preservation of property. While there are no specific rules which can be laid down to guarantee that such bombs will not explode when moved or handled, there are precautions which, if taken, will make the operations much safer.

When called to a plant or other location where a suspected bomb has been discovered, the first thing to be done is to decide if the infernal machine can be moved safely. This will depend upon several factors.

1) The location of the bomb.
2) The type of bomb, whether explosive or incendiary.
3) The size, weight and accessibility of bomb.
4) The damage the bomb could do in its present location.
5) Can the bomb be moved with safety.

In time of war or emergency, an officer of the fire department or police department must take risks that would not be justified under other circumstances. Where considerable damage would occur to military equipment, defense plants, war industry or cripple some essential service, the officer in charge must be the judge of whether or not to move the suspected bomb. The deciding factor in such cases would be the degree of risk entailed and the amount of damage the bomb would do, if detonated.

One Man Only Should Handle Explosives

One cardinal rule in handling explosives or incendiary bombs is that only one man should be near, or handle, the bomb, so that if it should explode, the loss of life will be kept at a minimum. Where the bomb is to be moved, the person approaching it should carry a shield, such as a mattress or pad, keeping it between himself and the bomb, as much as practical. If the bomb is of a size that it cannot be handled by one or two men, it may be possible to attach a rope to it and drag it to a safer location, with a block and fall. When this method is used, care should be exercised to keep the bomb in an upright position at all times. Where incendiary bombs or the smaller explosive bombs can be picked up and carried by hand, gloves should be worn. This not only protects the operator against burns but also insures against obliterating possible finger prints.

Where the bomb is to be transported through the streets, as few persons as possible should be assigned to the task. Mattresses and felt pads should be placed over the infernal machine and every possible protection given the driver, by erecting barriers of sand bags or other suitable material between him and the bomb. The bomb should not be turned on its side or upside down, and should be cushioned to avoid shocking or jarring. By using a trailer, the bomb can be separated from the driver by a greater distance. Densely populated sections of the city, or areas where traffic is heavy, should be avoided as much as possible. A police detail should accompany the vehicle and warn all other traffic away.

Where it is decided to permit the bomb to remain in the location where found, pending the arrival of an explosion expert, the following precautions should be followed: The building and

(*Continued on page* 166)

Practical Fire Service Rescue

Part 4 of a Series

By JOE MAHAFFEY*

THE following material is a brief outline pertaining to rescue operations in the event of fire or other emergency in connection with the evacuation of patients, inmates, or other persons from hospitals, sanitariums, homes for the aged, schools, children's institutions, jails and similar occupancies.

Firemen removing patients from top floor at a hospital fire. Several spectacular rescues were made from this window via the 65-foot ladder. Note barred and screened windows, some curtained, and wood roof construction.

Responsibility for evacuation may lie with the Rescue Squad or the Commanding Officer in charge of fire fighting operations or jointly with both of them. In any event it is imperative that all persons in immediate danger must be rescued or evacuated from the burning portion, even at the expense of fire control efforts if necessary. It must also be determined what additional portions of the building or adjacent buildings must be evacuated. In most cases the institution staff is well drilled for emergencies. Rescue personnel should be familiar with evacuation methods and pre-arranged plans and be able to coordinate the efforts of the department and those of the institution staff in carrying out such plans, bearing in mind that the institution management is responsible for the welfare of all inmates, and that lack of coordination can lead to duplication of actions, confusion, and loss of time and lives.

Several problems develop when the emergency evacuation of institutions is necessary. Prevention of panic is of prime importance. A quietly efficient mien and manner can be a great factor in preventing panic. Sufficient personel should be assigned as quickly as possible to stay with and assure all patients or other persons awaiting evacuation that they will be cared for or that they are not in danger. The danger of panic is especially great in the case of mental patients, bed patients, and the aged and infirm who cannot readily remove themselves from the building unassisted.

Evacuation of bed patients, with the minimum number of persons to do the job and with the least amount of discomfort to the patients, can best be done by the withdrawal of patient's beds from the building through wide doors and ramped exits usually required by fire prevention codes. In the event such exits are not available, the patient may be removed on his mattress; but this method is more difficult in that hand-holds or straps are not always provided on the mattresses and this method may require two attendants per patient.

Evacuation of polio inhalator cases presents the same problem as for the bed patient if the polio patient must stay in the inhalator with the added problem that the inhalator must be kept in operation manually until temporary electrical connections can be made.

Evacuation of ambulatory mental patients under restraint in mental sanitariums or persons confined in jails or similar penal institutions presents the additional problem of maintaining control or restraint after evacuation to prevent the person from running away or coming to bodily harm. Many such institutions are equipped with enclosures which can be used for this purpose. Prevention of panic, as previously mentioned, is most important in handling this type of person. The handling of violently disturbed cases should be done with the help of the institutional staff.

Evacuation of homes for the aged often involves the removal of the old and infirm from the second story. These people, although ambulatory, may be excitable and subject to panic and often have difficulty descending stairs. Particular attention must be given blind persons to prevent their using a usual means of egress which may be impassable because of the presence of smoke or gasses.

Evacuation of schools and school dormitories should present little difficulty if the fire alarm system required for this occupancy functions and evacuation can be effected according to procedure established by routine fire exit drills. Care must be taken, however, to ascertain that persons in areas where the alarm might be inaudible, non-ambulatory persons or persons overcome by smoke or gases are rescued.

Special hazards will be encountered in hospital rescue operations:

(a) Flammable liquid storage including ether, alcohol, acetone, etc., presents a potentional hazard to personnel when storage areas including surgeries, laboratories, drug rooms, and pharmacies are exposed to fire.

(b) Cylinders of compressed gases, including oxygen, carbon dioxide, cyclopropane, nitrous oxide, etc., when exposed to fire or heat, may rupture or fuse their soft plugs. The resulting rapid release of flammable or oxidizing gases may not only cause an explosion or increase the fire intensity, but also cause

Overcrowding of hospital wards increases the hazard to life in the event of fire. The difficulties encountered by removing the bedridden from such a ward as this are readily recognized.

*Los Angeles County Fire Department.

Orderly evacuation of a burning building is a life saver. Guests in various garb trail down hotel's fire escape to safety at a Chicago fire. Counterweight for drop ladder is shown at bottom left. Note also fire department standpipe, left center. Windows back of the escape are wired glass.

cylinders to become jet-propelled missiles endangering the lives of those within their range. Such cylinders should be kept cool by the use of hose streams.

(c) X-ray rooms and laboratories present an electrical shock hazard similar to that of other electrical equipment operating on 220 or 440 volts. Main switches for such equipment should be pulled immediately when these areas are involved.

Danger of injury from toxic gases emitted from decomposing nitrate X-ray film has ben minimized now that virtually all such film is of the safety (cellulose acetate) type.

Coordination of fire control and rescue operations is essential to successful institutional evacuation work. Hose streams may be necessary to protect corridors, stairways, or other means of egress while patients or other personnel are being evacuated.

Knowledge of floor plans, means of egress, type of patients, location of special hazards, etc., is essential in order to perform successful rescue work. Such information should be gained by presuppression inspections of these premises before the emergency occurs.

Standby Response

Standby response is response made, not because someone is in difficulty, but because there is an eminent possibility of someone getting into immediate and serious trouble. There are three main causes for standby response; fires, gas leaks and gasoline spills.

Wise chiefs of fire departments, knowing of the probability of fire personnel and others being overcome with smoke and knowing of the possibility of other dangers that can injure personnel and others, as falling walls, collapsing roofs, explosions and asphyxiation, have standing orders that the Rescue Squad shall respond to structural fires, gas leaks and traffic accidents.

In some of the larger companies which have both pumper crews and salvage or truck crews, it is the duty of the salvage crew to watch for, or hunt for, possible victims; and to perform necessary rescue operations.

In some of the smaller companies, response is made by only pumper crews and rescue apparatus, in which case the tail-board men are charged with the duties of salvage operations and the locating of overcome or injured persons, as well as fire fighting activities.

In the small company the rescue apparatus may be manned by only one or two men. When this is the case, unless there is suspicion that there is actually some one trapped or in trouble, rescue personnel should remain by the rescue apparatus and keep both the air mask and resuscitator ready for immediate use.

In some cases in small structural fires, such as residences, it is good practice for rescue personnel to immediately don air masks and search the premises. There are incidents in which bedridden persons and small children are overcome and are overlooked by the hosemen. After the search, rescue personnel should return to and remain at the rescue apparatus. It is not good practice for rescue personnel to indulge in fire fighting activities. Clean hands are sometimes important to first aid and it is always important that an experienced person shall be immediately available to man rescue equipment when an emergency of that nature arises during fire fighting activities.

Two-way radio equipment is as important to rescue apparatus as it is to fire fighting appaartus. The rescue apparatus may be stationed at the front of a burning building while overcome firemen are being dragged out the rear. Inter-communication by radio can be the means of saving a life. Rescue apparatus should remain at the scene until all vestige of danger to firemen is past.

Water Rescue

Rescue personnel may be called upon to perform rescues in unprotected coastal tidewater areas or may be called upon to assist the Life Guard Service in protected areas. To be called upon to respond to drowning cases in inland swimming pools, ponds, rivers and in flood areas is not uncommon.

Rescue personnel should have some knowledge of the action and hazards of rip tides, how the Life Guard Service performs to overcome these hazards and how to work with the Life Guard Service efficiently. They should have some knowledge of the means of personal protection in performing rescues. It is important to know that drowning persons have many times drowned the rescuer.

Even though he is a good swimmer, the rescuer should try to rescue the victime with what is known as the "reaching assist." If the victim is in any condition to help himself or grasp or hang on to an object, but too far out for the reach, the "reaching assist" can sometimes be extended with the use of a pike pole, ladder, turnout coat, rope or other equipment. Although not as spectacular as the swimming rescue the reaching assist will leave the rescuer in a much better condition to administer the necessary first aid or artificial respiration which might be necessary after rescue.

As far as the Fire Service is concerned, in most cases the rescue will have been made and the only purpose of the Rescue Squad will be resuscitation of the victim; however, there may be occasions where the victim has submerged and it will be the duty of the Rescue Squad to recover the victim or the body. It should be remembered that in using any grappling hook or other instrument, care should be exercised not to mutilate the body—there may still be life. Don't worry about water in the lungs, there is seldom over a spoonful or two. Turn the victim face down with the head downhill if possible and start resuscitation immediately.

The roof ladder, with hooks turned out, if used with ropes, and weighted, can sometimes be used successfully to drag the bottom of a pool or pond. Some types of selfcontained breathing apparatus used in the Fire Service have been tried with fair success under water. The best results were obtained when the wearer used swim fins. Continuous downward swimming must be exercised or the buoyancy of the apparatus will bring the swimmer to the surface. Rescue personnel are not advised to attempt a water rescue with breathing apparatus unless they have had some previous experience.

Always remember that a victim of drowning is subject to severe shock. Retain body heat while administering resuscitative measures.

Rip Tides

Rip tides are one of the most common causes of water accidents to swimmers and bathers who use the coastal tidewater beaches. Rip tide should be distinguished from undertow. Undertow is a current below the surface of the water that runs contrary to the current at the surface. Rip tide is actually a river, or current, flowing in the ocean. The flow is from shore to sea and may extend from fifty yards to five hundred yards seaward.

Some rip tides are stable and constant and may remain in one place for a long period of time. Others move up and down the coast line and appear and disappear. They are caused by channels be-

Injured guest being removed on a stretcher by firemen using parallel ladders, from the burning Canfield Hotel in Dubuque, Iowa.

ing cut in the ocean floor by currents, tides or pounding seas.

Water flowing shoreward with the waves flows faster to sea in the channels than in the shallower waters thus forming the "rivers." These "rivers" may be anywhere from fifty feet to one hundred and fifty yards wide (in some cases wider) and flow so swiftly that even a good swimmer has little chance to gain shore when in the current. As rip tides can be readily discerned by trained observers, the strategy of rescue can be determined in advance.

Several methods of rescue are in use. If it is an off-shore rescue, as a swimmer too far out or a boat upset, and a rip tide is not involved, a paddle board or skiff is used. When a swimmer or bather is involved in a rip tide, a torpedo float is usually used.

The torpedo float may be made of rubber or metal. It is rigged with a short towline and shoulder sling so that it floats behind the swimming rescuer. When two guards work together, or there is a shore crew, one end of a long 3-16 inch nylon retrieving line that has been coiled into a light canvas bucket is fastened to the float and trailed out to the scene of the rescue by the rescuer. Time can be gained by swimming in the current.

When within reach of the victim the float is shoved toward him. If the victim is conscious he will grasp the float and hang on. If he is unconscious and the metal type is used he must be tied to the float. When the rubber float is used it may be fastened around his chest under the armpits with the snaps provided. Having buoyed the victim, a hand signal is given to the shore crew or shore partner and victim and rescuer are pulled to shore against the current. When willing onlookers give assistance they are cautioned to pull slowly and steadily. To pull too fast would force victim and rescuer under water.

When one guard works alone he tows the float out to the victim without the ling retrieving line. When the victim is properly buoyed the rescuer tows the victim parallel to shore until out of the current and then to shore.

The tail end of a rip tide is often choppy, full of cross currents and difficult to get out of or swim in. They should be avoided by even the best of swimmers.

Mountain Rescue

The responsibility of mountain rescue may vary according to the locality. In some areas where mountainous terrain is included in or adjacent to fire protection districts or municipal fire departments, the responsibility falls on the Fire Service. In other areas the responsibility may lie with the office of the Sheriff, department of recreation, department of fire warden or the Forest Service. Where military is concerned, of course, jurisdiction would lie with the military. Laws and ordinances vary in different States or localities. In some cases several or all of the authorities mentioned work hand in hand.

The need for mountain rescue may be caused by airplane crashes, lost or missing persons, sick or injured persons, storm, flood, fire or other catastrophe. The act of rescue may involve skis, sleds or snow plows, pack animals, helicopters or other aircraft, motorized ground units, or men afoot; and may include all of them. The success of major mountain rescue operations depends on proper coordination between ground crews; between ground and air crews; or between foot, air and motorized crews. Communications between these forces is usually established by radio through a central dispatching station or by "walkie talkie" from crew to crew.

Any of the following equipment may be necessary to the rescue: stretchers, splints, blankets, first aid kits, ropes, shovels, axes, brush hooks, cross-cut saws, canteens, field glasses, compasses and flashlights. In some cases relay camps and food and water stations must be established. When the type of rescue is known, the type and amount of equipment necessary can be predetermined, but when the nature of the rescue is unknown it may be necessary to pack in all equipment even though unused. When the going is rough and the crew shorthanded it may be necessary, in order to cut the pack, to improvise at the scene of the accident.

When the accident is serious, trained first aiders, and if possible a doctor, should be included in the personnel of the Crews. Persons who know the area and terrain should also be included. Experienced trackers and woodsmen are sometimes necessary and on occasion, in the case of missing persons, dogs have been used.

Forest Fires

When a forest fire is involved in the rescue it is highly important that a means of escape shall always be afforded the rescue party to avoid entrapment. Trails must be kept open or new ones made. Communications should apprise the lead and relay parties of the progress of the fire, shifting of the wind, and means of egress when established routes become treacherous. When possible, lookouts should be established on high points.

When dead persons are encountered, as may occur in airplane crashes or falls from cliffs, etc., action again depends on local laws and ordinances, or dictates from the military. In some areas sheriff's deputies are endowed with the authority of the Coroner and are authorized to move the bodies, in some cases to the morgue or nearest authorized undertaking parlors; in others, to the nearest terminal of mobile transportation where the Coroner assumes charge. If death occurred by sickness or suspected pestilence, the health department may be called in. If death occurred by suspicion of the violence of others the Coroner may request that the body shall not be moved until he or his authorized deputies have investigated. If the body lies in the path of advancing fire or flood any person may move it to a point of safety together wtih the evidence of the cause of death if such evidence can be moved. Rescue personnel should know laws, ordinances and agreements of this nature in the area in which they are established.

Although we are taught in the Fire Service that rescue personnel should not attempt traction splinting on fractured limbs, but only to immobilize, when transportation to a doctor or hospital, where X-rays can be taken, is immediately available, in mountain rescue a different picture is presented. During the long and rough transportation from the mountainous area the condition of shock can be a greater enemy to the victim of fracture than the ailment itself might be. Therefore if we can alleviate pain with traction splinting, then that is the humane thing to do. If a doctor has been included in the rescue crew we should be governed by his dictates. This also applies to rescue in rural areas far removed from the facilities that a metropolis affords.

The Stokes navy stretcher is probably the best type of stretcher to use in mountain rescue. It is rigid and, with proper padding, can be used for traction, voiding the need for further splints. With the straps provided the victim can be laced into the stretcher for safe lowering or raising over cliffs or steep places. The victim can be transported over rough terrain without the middle sagging which might be important to a fractured spine. The sides of the stretcher help protect the victim from the onslaught of limbs and brush along the trail. This type of stretcher can be easily lifted into a helicopter and more readily mounted on a sled or pack animal than other types.

Other than traction splinting, and the use of Epsom salts for infection, the general rules of Fire Service first aid apply. Hot tea, hot coffee or hot bullion made from bullion cubes can all help to alleviate the condition of shock, and the ingredients and utensils necessary for their making can be easily packed. Water should be given. The tea, coffee or bullion can be made at the scene during preparations for transportation. Remember that exposure, malnutrition and thirst can cause or add to the condition of shock and should be given even more immediate consideration than the problem of transportation. Whether transporting the victim uphill, downhill or on the level, remember to keep his body or the head slightly lower if the face is pale or slightly higher if the face is flushed. Retain body heat but do not overdo it with too many blankets. Shade the victim's eyes from the sun or protect him from wet or freezing weather. If a tourniquet has been used, loosen it every fifteen minutes. See that victim is not bound into the stretcher in any manner to stop circulation. Give the victim water along the trail.

If there has been frostbite, do not rub, massage, rub with snow or apply heat. Frostbite may occur to the fingers, toes, ears, cheeks or nose and, in severe cases, other portions of the body. In cases of extensive exposure, the frostbitten area may be stiff and pale. In this case the capillaries and tissues are probably frozen and brittle. Massage or rubbing will break down the tissues and rupture blood vessels. Gangrene can set in. The part frozen can not live long without circulation. If it is still possible to save the part, it must be done with slow thawing. Do not apply heat. Cover the part with woolen cloth in such a manner that body heat will slowly bring the part to body temperature, or cup the hand over it so that thawing will take place gradually.

In the case of infection from wounds, Epsom salts packs may be applied to the wound. Boiled hot water should be used. Keep the pack moist with a hot solution of Epsom salts (six tablespoons Epsom salts to a quart of boiled water) during transportation.

The walkie-talkie has been known to operate effectively for a distance of twenty-five miles when there is no in-

terference; or the distance between operators is in "line of sight"; but they are not effective through mountains. When crews are working on two sides of a ridge, relays must be spotted at the peak of the ridge to establish communications. The relays can also be used as spotters when fire is involved.

Always remember that mountainous terrain can be as dangerous to the rescuing party as to the victim. Haste can be the cause of slipping or falling with resultant fractures, sprains or painful contusions; rolling boulders can cause bad accidents; it is easy to get confused as to direction, and eventually lost. Tools inexpertly handled can injure others. A slight change of wind can cause fire entrapment. Any of these can detract from the efficiency of the entire crew. Clear thinking, watchfulness and precise movements are necessary at all times.

There are many hazards connected with rescue. Inasmuch as the Rescue Squad is on its own in most cases and works independently of fire suppression crews, rescue personnel should be aware of these hazards and prepared to meet and offset them.

Such hazards are too numerous to cover in this treatise. They may range from the agitated actions of misunderstanding and malicious bystanders, through further cave-in or explosion, to electrical and gas hazards common to rescue procedure.

Rescue personnel, knowing the time and money expended by the taxpayers to prepare and train them, and the possible cost to lives if they are rendered unfit for duty, should pre-plan and train themselves to cope with the known hazards, and by so doing will condition themselves for the unknown hazards that might arise.

In this treatise only a few of the main and most common hazards will be discussed.

Electrical Hazards

In most cases, electrically charged wires, underground or above ground and over which current is carried from powerhouse to consumer, are installed to conform to the National Electrical Code. Underground wires are always insulated. Overhead wires may or may not be weather proofed. Insulation, exposed to the elements for a period of time, may have little value. Current below 600 is considered as low voltage. Current above 600 is considered as high voltage. In some areas 750, rather than 600, is considered as the number of volts dividing high from low. To the fireman the voltage is an indication of the character of the electrical system. Rescue personnel must understand that serious injury or death may be caused by a current of any voltage; low voltage does not mean safe voltage; more deaths are caused annually throughout the nation by low voltages than are caused by high voltages. It must be further understood, however, that in rescue practices the degree of the hazard and the precautions that must be taken increase with the magnitude of the voltage.

Wires sometimes fall as a result of storms, fires, broken poles or uprooted trees or broken limbs. These wires may fall on structures, wreckage, metal fences or clothes lines, automobiles, on the ground or on a person. Wherever they fall, they create a hazard. In rescue work, wires that have not fallen may also be a hazard. To contact them with ladders, tools, wet ropes, or with victims being lowered or raised, can cause serious injury or death. Burns, electric shock or eye injuries from arcing or electric flashes may occur even though a person is not in direct contact with the wires or conductors. Contact can be made by direct touch of the wire or by touching any conductor over which a wire may have fallen. A conductor may be metal, water, ground, any moist object or a person.

In the Fire Service we are taught that if only fire is involved, fire personnel should let the utility companies do the handling and cutting of wires. This is good practice and may save many lives and may mean a great saving in time and money to the utility company concerned and the area involved. However, in Rescue, when a human life is involved a different picture is presented. Regardless of possible property, time or monetary loss, every effort must be made to save the life involved and to prevent endangering more lives.

In overhead installations, voltage, for the purpose of rescue, is not determined by the size or the covering of the wire but by the size and type of insulators, spread betwen wires, and signs on crossarms. On pole installations, high voltage wires are generally over low voltage wires. Rescue personnel should learn the types of insulators and signs used in the area they serve and the voltage they indicate. High voltage transmission lines are not installed over residential areas but on thoroughfares and easements; however rescue personnel must bear in mind that serious injury or death may be caused by any voltage, high or low, and by any type of electrical installation, inside or outside.

The importance of knowing something of the voltage carried in the wire involved lies in the safety factor of the length of any non-conducting handle on any instrument used to cut or remove the wire. The factor used by experienced linemen is as follows:

Above 7,500 but less than 12,000 volts —1 foot

Above 12,000 but less than 30,000 volts —1 ft. 6 in.

Above 30,000 but less than 45,000 volts —2 feet

Above 45,000 but less than 75,000 volts —3 feet

Above 75,000 but less than 110,000 volts—5 feet

Above 110,000 but less than 250,000 volts—6 feet.

Linemen use this factor without gloves. When using live line tools it is better that men do not wear gloves so they may feel any leakage before physical damage can be done by contact with an unprotected part of the body. Rescue personnel should multiply the above factor by three and wear rubber gloves.

Providing the handle is moisture free and properly cared for, the pike pole is recommended to move the wire from the victim or conductor, or the victim from the wire or conductor. The wooden handled mechanical axe is recommended to cut the wire. Metal handled tools, even though insulated, are not recommended too highly in even low voltages. To understand the importance of this statement, watch the spark plugs on your car when they are a little dirty or damp. Killings arcs can jump the short insulated hand holds on metal handled tools, for there is no safety factor.

Should the rescue apparatus contact a live line on arrival, do not step out of the apparatus onto the ground. Jump clear so you will not form a short between the metal of the apparatus and ground. This also applies to persons in private cars. Urge them to stay in the car until you can remove or cut the wire from the car. When cutting live lines be sure that the loose end will not contact bystanders. During fire and windstorm, assume that even telephone lines can be dangerously charged from high voltage lines falling across them.

Rescue personnel should always bear in mind that after the circuit has been broken by moving or cutting the wire or by removing the victim from the conductor or wire, the next important step

(*Continued on page* 136)

Firemen, with respiratory protective equipment ready for use, employ fog nozzle to absorb ammonia fumes from air near tank car which sprung leak at Oakland, Calif.

DIGGER BREAKS GASOLINE LINE; BLAST AND FIRE INJURE 12

Four-Inch High Pressure Gasoline Pipeline, Upon Rupture, Provides Fuel For Destructive Fire

By Paul C. Ditzel

IGNITION of gasoline fumes at the site of a construction job resulted in a sharp blast and a roaring fire which injured or burned 12 persons, many of them critically.

The freak fire was fought by four units of the Los Angeles County Fire Department, under Seventh Battalion Chief Allan Bartling, and two pieces of equipment from the nearby Hawthorne Fire Department.

A Quickway ditch digger, described by construction men as a "back hoe," was digging a ditch near a grocery store at 4104 W. Compton Blvd., Lawndale, in territory served by the Los Angeles County Fire Department. The mobile digger, operated by a crew of two men, was digging a sewer trench for the one-story frame grocery.

The digger struck the top and side of a four-inch high-pressure gasoline line which extended from Ventura, Calif., to the Shell Oil Company's refinery at Dominguez. A hole, 2¼ inches long and ⅛-inch wide was made by the digger. At that time, a quantity of casinghead gasoline was being pumped at 595 pounds per square inch pressure, from one of five pump stations along the line. Estimated pressure at the break was 465 pounds per square inch.

The gasoline line is one of many which form a network in the area south of Metropolitan Los Angeles, which contains many oil refineries and oil wells.

According to information obtained by Capt. George Figley, working under Battalion Chief Leslie A. Dutton in charge of the Los Angeles County Fire Prevention Bureau, the two workers on the mobile digger immediately switched off the ignition on their rig. They grabbed shovels nearby and started to cover the gasoline, which was bubbling from the break, with dirt from the trench. The gasoline line was 31 inches underground, although laws permit lines to be laid as shallow as 24 inches. Contractors and others who plan to dig in the area of such underground obstructions are supposed to familiarize themselves with properties underground.

Fumes spread rapidly from the ruptured seamless steel pipe. Suddenly there was a gigantic blast, followed immediately by a roaring fire which quickly involved the front of the grocery store and fully involved another store and dwelling next to it.

Source of Ignition Unknown

What ignited the gasoline probably will never be known. Best guess would place the ignition point at a pilot light in a gas appliance in one of the buildings nearby. Fire investigators estimate there was a one-minute interval between the time of the rupture and the time of ignition.

Nearest pump station to the break was at El Segundo, approximately two miles away. The automatic pump there shut down immediately when there was a pressure drop in the line. However, there was plenty of casinghead gasoline in the pipeline to start the fierce fire.

Six Units Respond from L. A. County and Hawthorne

The Los Angeles County Fire Department logged its alarm at 11:54 a.m., Dec. 29. The call was received from a County Roads Department guard half a block away from the fire site. Dispatchers sent Engine 21, located about four blocks away from the fire, Engine 18 and Engine 54 plus Rescue 18, which is quartered with Engine 18.

Chief Paul C. Baumgardner of the Hawthorne Fire Department received a telephone alarm of the fire at 11:56 a.m. He notified the County. Upon receipt of three additional calls from citizens he dispatched Hawthorne Engine Co. 1, a 1,000-gallon pumper, with four paid men, and Hawthorne Rescue Squad 1, with a paid driver.

Thick black smoke from the fire could be seen for miles as equipment rolled to the blaze. Intense heat from the ignited gasoline kept first-arriving firemen half a block away from the fire. County firemen laid their lines and centered their attention on protecting a row of one-story frame cottages across the street from the fire. Flames were blowing toward the cottages and for a time it looked as though the entire block of homes would ignite. The blast blew out windows in many of these homes and fire could easily have touched off the houses.

Other firemen operated their lines on the blazing store and into the raging flames. Only Compton Blvd. was paved and nearby streets turned the area into a sea of mud and complicated fire-fighting operations. Chief Bartling said water supply was somewhat of a problem because the heat prevented firemen from reaching hydrants closest to the blaze. Eventually, hookups were made at most of these hydrants.

Heat was so intense that firemen were able to approach within striking distance with their handlines by having their comrades play protecting water spray upon them. Clouds of steam rose from wood shingled rooftops of the cottages as the cottages gave threat of igniting momentarily. Some of the cottages were scorched but in the main damage there was minor.

The fire melted windows in a late model sedan parked on the opposite side of the street from the fire. Flames quickly consumed most of the interior of the car.

Those injured were mainly in a small store adjacent to the grocery. The store dealt in Mexican goods and a Mexican family operated it. Most of the family were at the store at the time and the wife and eight children of the owner

When the Lawndale fire was at its height. Intense heat interfered with early fire fighting operations.

were severely burned and cut by flying glass.

Both operators of the crane, C. R. Edinger, 53, and his employe, Thomas Anastas, 31, also were critically burned. Two other casualties were Firemen Howard Kainz and Tom Barbre. The firemen suffered burns on their hands while battling the flames.

The Shell Oil Co. got first notification of the blast at 12:20 p.m., and the company succeeded in shutting down all five pumps from Dominguez to Ventura by 12:27.

Captain Figley said the casinghead gasoline had a vapor pressure of between 60 and 80 pounds per square inch, and was much more difficult to put out when ignited than regular gasoline because the casinghead gasoline had not had the butane removed from it.

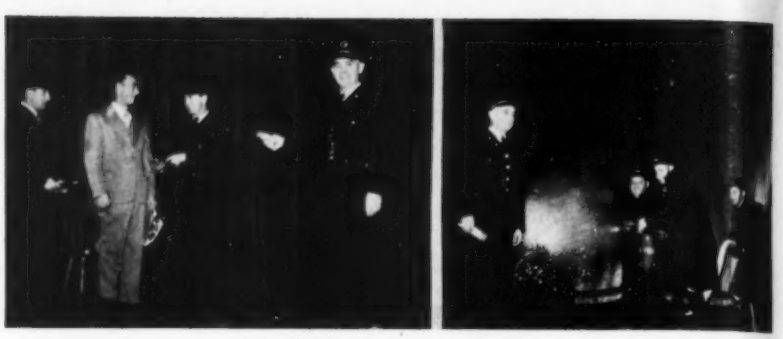
Three hours after the fire started, a block valve was located two blocks west of the fire. Firemen then pumped water into the gasoline line at the block valve and the fire immediately was snuffed out.

Damage Estimated at $25,000.00

Damage was estimated at $25,000. The grocery market suffered about $5,000 damage mainly through smoke and water. The other market next door and dwelling were gutted and damage there was put at $7,500, $3,500 of it to the contents.

Firemen said the presence of mind of the grocery store owner, Joseph Johnson, kept the casualty list from being higher. Recognizing the high fire potential, Johnson herded seven customers in his store out the back door before the gasoline ignited.

The Mexican family, most of whom were injured, were standing in front of their store, adjacent to the grocery, when the blast occurred. Apparently they were aware of the broken gas line and, smelling the fumes, rushed outside to see what had happened. The mother had a babe-in-arms when the blast occurred. Both were critically burned.



Noranda dramatizes F. P. Week.

A capacity audience in the Noranda, Que., Theatre on Oct. 9 witnessed an impromptu skit acted out by Fire Chief Ted. Desrosiers and members of the Noranda Fire Department.

The Chief, as narrator, explained the fire hazards in the home while a fireman acted the part of householder and two uniformed men played the role of inspectors. Concluding his narration, the Chief, pointing to the inspectors, told the audience, "It is up to you; choose, whichever you prefer—do you want us to visit you like this," indicating the inspectors, "or like this—

Whereupon three other fire fighters in turnouts rushed onto the stage, dragging a hose with 1¼-inch nozzle and blowing CO_2 from a four-pound extinguisher. The discharge gave the impression of a water spray gushing across the platform. This, and the simultaneous explosion of a photographer's flash bulb, brought startled exclamations from the audience.

Over 600 fire defense quiz pamphlets were handed the audience as they departed.

Magnesium Furthers Aircraft Service Fire

Firemen of the Martinsburg, W. Va., Fire Department were handicapped by explosions of magnesium, oil and acetylene in fighting a midnight blaze that swept through the main shop and offices of the Martinsburg Aircraft Service, Inc., on Jan. 12, last. Building and contents were almost completely destroyed with loss estimated at $100,000.

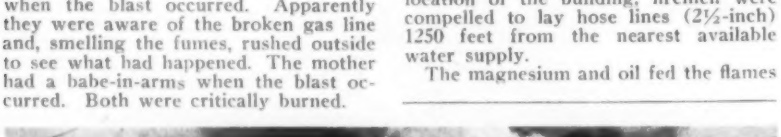
The alarm was received at Fire Department Headquarters at 11:20 P.M., and Engine Companies 1, 4 and 5 were dispatched under command of Assistant Chief M. C. Fellers. Because of the location of the building, firemen were compelled to lay hose lines (2½-inch) 1250 feet from the nearest available water supply.

The magnesium and oil fed the flames and generated intense heat, which kept fire fighters at a distance for some time. Ultimately they were able to move in, however, and at 230 A.M. Chief Fellers ordered all lines shut down and companies returned to quarters, leaving a security line on the scene to care for any rekindle.

At the time of the fire the school was training some sixty students in both night and day classes, operating under affiliation of the CAA, the Veterans Administration, State Board of Education and others. These agencies were notified of the fire.

The blaze also consumed a midget racing plane built by one of the owners, Charles H. Bolton, and an Air Force L-4 which arrived at the shop only the day before. Cause of the fire was not immediately determined. The only casualty was the death of a dog.

CHARLES C. MCATEE



Flames from ruptured gasoline supply line sweep upward at Lawndale, Calif. This picture was taken just before the arrival of the fire department.

Buffalo, N. Y., Fires Kill 6

Harold Becker, Buffalo, N. Y., fire commissioner, in his preliminary report for 1952 said fires in that city killed six persons, including two fire fighters, and injured 95 others.

Commissioner Becker said fire losses for 1952 in Buffalo will amount to $1,850,000. The 1951 fire loss there was $1,419,277.90. He said the exact monetary loss will not be known until final insurance adjustments are made.

Buffalo firemen responded to 3115 fires of all types, compared to 2445 in 1951 and 2420 in 1950. The 1952 breakdown showed: building fires, 1279; autos, 371; grass and rubbish, 966; dumps 195 and other miscellaneous outdoor fires, 204.

Firemen answered a total of 7647 alarms, contrasted with 6338 in 1951 and 6213 in 1950. A breakdown showed: 814 box alarms; 3470 telephone alarms; 97 American District Telegraph alarms; 268 emergency calls and 2998 first aid calls.

Commissioner Becker's report showed 66 instances where several boxes at different locations were pulled for the same fire; 36 second alarms, eight third alarms, 136 special call and four mutual aid calls. Of 254 false alarms sounded, 17 were by telephone and 237 by box. The 1951 total was 249 false alarms. PAUL C. DITZEL

Fire rages through Rockland, Me., business area. Fishing port threatened by fire which caused $1,500,000 property damage and was finally controlled by fire fighters of thirteen departments, and Coast Guardsmen.

Rockland, Me., Threatened

Mutual aid functioned on Friday, Dec. 12, to help control and extinguish a roaring fire that threatened to wipe out the busy fishing port of Rockland, Me. Fire fighters of 13 communities were joined by Coast Guard units to check a spreading blaze that burned through almost two full blocks of the business district, causing $1,500,000 property loss.

Among the properties wiped out were the Hotels Rockland and Bayview, of 53 and 11-rooms respectively, Studley's Furniture Store, where the fire originated, two barber shops, a cleaners shop, optical company, a variety store, a cafe, tank works, surplus storerooms, lunchroom, appliance store, a shoe company, bowling alley and two markets, together with a number of family apartments. Several other stores also were damaged by fire, smoke and water. Fortunately there were no fatalities, or even serious injuries caused by the fire, which raged unchecked for several hours.

The fire was discovered by a pedestrian who notified a policeman who, in turn, pulled the nearest fire alarm box. Shortly after the alarm was sounded, and before the Rockland firemen had deployed their forces, an exposion, evidently of pent-up gases, blew out windows of the Studley's store and the Hotel Rockland, after which flames quickly involved these occupancies. Fire then caught the Bayview Hotel, which was attached to the southern end of the furniture store, and in minutes the blaze was out of control and the entire block threatened.

A strong wind blowing off the harbor helped the flames jump Main street and ignite stores and apartments on the western side of the street. The blaze then worked around the corner of Park and Main streets and moved up the southern side of Park before firemen from several departments stopped its advance at the Knox Theatre.

The Rockland Fire Department received the alarm at 6:35 P.M., and the first calls for assistance went out quickly after the seriousness of the situation was known. The Rockland fire fighters, under Chief Van E. Russell, labored mightily to prevent extension of the blaze but, feeding on the old structures, most of them wooden, and fanned by the mounting wind, theirs was a losing battle until reinforcements arrived.

Fire departments answering the calls included the following: Bangor, Belfast, Camden, Rockport, Augusta, Thomaston, South Thomaston, Warren, Waldoboro, Damariscotta, Bath, Friendship and Brunswick. Bangor firemen, called at 7:25 P.M., arrived in one hour and 20 minutes; those from Bath made the trip over slippery roads in an hour, and another unit from Balfast made fast time through the wet and foggy night. The farthest company traveled 70 miles and reported the reflection of the fire could be seem 10 miles out of Rockland.

Disaster units, which had been set up in Knox County for some time, got their first stiff workout. Civil defense groups patroled the streets, others set up food kitchens and aid stations. Walkie talkies and public address systems were used for the first time in a real large scale disaster, to keep units in touch with each other. The Red Cross took care of the homeless, evacuated from burned out apartments. The Salvation Army stood by as usual, with hot coffee-and. Workers of the Central Maine Power Co. cut power lines that threatened trouble, and later repaired the service in the affected areas.

Coastguardsmen from two cutters set up portable pumps, relaying salt water along Tilson ave. to municipal apparatus. City units also took suction from the Bay, while others used street hydrants. The water supply held up throughout the struggle, but fire fighters were handicapped by the chill, driving rain, mixed with snow and the heavy blanket of smoke which manteled the area.

Later in the evening the wind changed to aid firemen hold the blaze at the Knox Theatre. By midnight fire fighters apparently had mastery over the flames and by 1:45 A.M. the first of the out-of-town companies was picking up.

Fargo Uses Odor Removers

The annual report of the Fargo, N. D., Fire Department for the year 1952 includes the interesting item: Airkem Used . . . 1,127 oz; Osmix used . . . 393 oz.

To the uninitiated, this would mean little, but to fire fighters who are "following through" after the fire, in order to reduce fire losses to the minimum, it means that the latest techniques in smoke and odor removal, are being followed by this department.

The number of alarms for the year was 308, of which 240 were telephone, 11 box, 12 oral, 16 by "detector" and 29 by radio. Pump cans extinguished 68 of the actual fires, and booster lines, 58. Estimated fire losses for the year were $76,882.60.

Ed Lamb Honored

Ex-Chief Ed. Lamb, for many years the efficient Sergeant at Arms of the International Association of Fire Chiefs, was presented with a gold Sergeant at Arms badge at ceremonies held at the office of the President of the Board of Fire Commissioners of San Francisco, Cal., recently.

The badge was forwarded by I. A. F. C. President, Chief G. R. McAlpine of Oklahoma City, to Chief Edward P. Walsh, of San Francisco, for presentation. Chief Walsh is First Vice President of the Pacific Coast Inter-Mountain Division of the I. A. F. C.

Chief Lamb was further honored last fall, when he was made Honorary Chief of the Oklahoma City Fire Department.

President of the San Francisco Board of Fire Commissioners, Leo H. Shapiro pins "Sergeant-at-Arms" badge on Chief Ed. Lamb, as Chief Edward Walsh (right) of San Francisco looks on.

Spire "Takes Off" at Church Fire

Nominated for the "fire picture of the year" is this spectacular shot of the spire of the 38-year-old Church of Our Lady of Mount Carmel, located about eight miles from the town of Buctouche, N. B., "taking off" during the destruction of the edifice by fire on Jan. 15th.

The fire, which caused damage estimated at between $150,000 and $200,000, broke out from unknown causes, shortly after 9:00 A.M. in the Kent County, New Brunswick, community of St. Mary's. The blaze apparently started in the roof of the structure, about the location of the vestry attic, at the rear of the church, and had been smoldering for some time before it was noticed by a parishoner, who turned in the alarm.

Outside fire departments were called and equipment from Moncton, Buctouche, St. Anthony and Shediac responded, only to encounter the old handicap of shortage of water. Firemen's efforts were confined to preventing extension of the blaze to barns at the rear of the church, the Glebe House situated only 50 feet from the church, and two residences which were threatened for a time. The barns ignited, but firemen extinguished the blaze, while preventing extension to the surrounding properties.

Two hours after the blaze broke out, the 150 spire slipped from the weakened roof and fell alongside the highway with injury only to the telephone wires.

Citizens, who rallied fruitlessly at the first alarm with buckets and pails, managed to remove most of the religious articles and statues before total destruction.

Acknowledgement: Appreciation is extended Fire Chief M. H. McKie, Moncton, N. B., Canada, Fire Department for material upon which this report is based.

Steeple "takes off" at church fire.

Steeple of Church of Our Lady of Mount Carmel at Mt. Carmel, N. B., "leaves" blazing edifice during destructive fire of January 14. The old story of no water, and a total loss.

An aerial ladder illusion.

Firemen on an 85-foot aerial ladder play streams of water on the fire which gutted the Donnelly's, Inc., store in South Norwalk, Conn., December 17, causing damage estimated at nearly $300,000. The above photo would indicate that Norwalk firemen have an aerial ladder which throws two streams of water from its nozzle. Actually, however, as Irving Taub, photographer for the Bridgeport Post, was taking a time exposure of this scene, firemen moved the ladder, which gives a double picture of both ladder and stream.

Fire Ruins Store Second Time in Three Years

More than 100 firemen battled raging flames at South Norwalk, Conn., on December 17, when one of the city's most spectacular fires in many years caused damage of nearly $300,000 to Donnelly's Inc., store at 32 Washington street.

Two firemen were hospitalized, 12 more treated at the scene for smoke inhalation, minor cuts and bruises and approximately 30 persons were forced to flee in night attire from their apartments above the burning store.

James Donnelly, 56, owner of the store, was stricken with a heart attack while watching firemen trying to save the structure. He was taken to Norwalk Hospital and released the following day.

It was May 30, 1951, when firemen fought a fire in the same store which caused damage estimated at more than $100,000. The store only recently had been rebuilt and contained large quantities of sporting goods, television sets, radio and furniture.

The fire started at 9:43 P.M., when a muffled explosion was heard in the basement of the building by a clerk who was working overtime. The clerk telephoned an alarm to Fire Headquarters. A general alarm was sounded a few minutes later by Fire Chief Charles A. Volk, bringing out all the city's fire fighting equipment, which included seven pumpers and two aerial ladder trucks. Firemen from nearby Westport, under command of Chief Harold A. Shippey, also responded to aid the Norwalk department combat the flames.

Fire Chief Volk said two 500-gallon oil tanks in the basement were responsible for the dense smoke which made fighting the fire extremely difficult. An explosion in the oil burner is believed by Chief Volk to have caused the fire.

The buildings next door, the Knights of Columbus South Norwalk hall and the Independent Order of Red Men's hall, were not damaged by the flames, but a haberdashery store and a ladies' dress store were damaged by smoke. The Empress Theater, two doors away from the burning structure, was vacated during the final showing when smoke entered the building. TOM MAGNER

"Kentish Fire"—Sprightly Journal

One of the most interesting of the foreign periodicals devoted to the fire service is "Kentish Fire," published by the Kent Fire Brigade. This Journal, 28 pages and cover, size 5½ x 8½ inches, is well edited and printed. It recounts the operations of the Kent County Divisions, describes important fires, and contains personal news for both male fire fighters and the distaff side.

The editor, William J. Butt, writes: "As you know, the fire service in England is now controlled by County Authorities whereas prior to the National Fire Service—a war-time arrangement which is now abolished—fire services were controlled by small municipal authorities and were supposed to work only within prescribed boundaries. Many of the new brigades have their own magazines."

Chief Escapes Injury in Extinguisher Explosion

Assistant Fire Chief Lucia of the Palmerton, Pa., Fire Department, is glad to be alive, following an unusual accident in which a soda and acid fire extinguisher exploded while on test.

Palmerton, population 7000 with two fire companies, covers an area of 6 square miles, but one company of the department protects a rural area of approximately 25 square miles.

Assistant Chief Lucia of the Palmerton, Pa., Volunteer Fire Department, displays ruptured soda and acid extinguisher that "took off" during test.

Palmerton firemen, all volunteers, inspect all business establishments at least once a year. Recently, Assistant Chief Lucia on such inspection, found four soda and acid extinguishers in a blouse factory. According to fire department practice of recharging all such extinguishers free, the Chief put these aside for test.

Upon discharging one of the extinguishers, the Chief noticed evidence of an excessive nozzle pressure. He held the hose of the extinguisher—but not the chamber—which was fortunate, because in a matter of a few seconds, the extinguisher exploded with such force that the girls in the factory some little distance away heard the blast.

The extinguisher shell took off and sailed approximately 150 feet into the air, flying over a two-and-a-half-story grocery store and landing in a neighboring yard. Luckily neither the Chief nor two employes of the factory who were standing nearby at the time were injured.

The chief's good fortune was partly due to the fact that he was experienced in this type of test work. Ordinarily, when discharging the extinguisher, the user is partly over the chamber and receives the brunt of the blast.

Fire Chief George Samok of the Palmerton department believes that the explosion was due to either weakened rivets, an excessive charge in the chamber, or else there was an adverse chemical reaction of some sort before the extinguisher could fully discharge its load. The Chief passes along the details of this incident in the hope it will remind others to exercise caution in discharging this type extinguisher prior to inspection and refill.

A Flurry in Flammable Hair Sprays

As 1952 waned, a wave of warnings, against the use of flammable spray-on lacquers used to keep milady's coiffeurs in place, were issued by the nation's fire service.

Although records of fatal or even serious burns resulting from the dangerous products were few, many samples collected from stores and tested by fire chiefs and inspectors proved they were highly flammable and a life hazard.

At the December, 1952 meeting of the Board of Directors of the New England Association of Fire Chiefs in Hartford, Conn., a resolution was unanimously approved warning against continued use of flammable toiletries and cosmetics, as well as wearing apparel, with emphasis on the wave sets, many of which were being sold by retailers who had no knowledge of the hazardous nature of the products.

The Association urged that all such products containing flammable materials be plainly labeled to indicate their dangerous nature, with appropriate warning on the "safe use of same."

The State of Connecticut, which took official recognition of the potential dangers of flammable hair-do's, introduced stringent regulations which later were modified, when manufacturers and distributors either withdrew the offending products or affixed the necessary warning label.

In New York City, nearly all such products were sought out and compelled to be labelled. Fire Commissioner Grumet sounded warnings in the press, as did commissioners and chiefs in numerous other cities, including Milwaukee, where Chief Edward Wischer and Deputy Fire Chief Harry Johnston, head of the Fire Prevention Bureau, warned that women who used the lacquer while smoking or near flame were in danger of becoming human torches.

Unquestionably the prompt drive by the fire service, hard on the heels of the "explosive sweater" scare, resulted in reduction of the hazards.

West Palm Beach Losses Down 30%

Losses for the year 1951 in West Palm Beach, Fla., decreased 30% from those of the year before—$58,714 as compared with $93,764, a 1951 per capita loss of only $1.36, according to the report of the new Chief of Department, J. H. Witherspoon, who recently took the post vacated by Chief Ray Larrabee, who resigned to take a position in Panama.

The department responded to 394 alarms, traveled a total distance of 1,652.1 miles. There were 22 false alarms.

The department now has a force of 50 men, manning three fire stations, with six pumpers, four booster pumps, two aerial ladders and various other vehicles.

Chief Witherspoon joined the department in 1925 and moved up through the ranks to the top post, from first assistant chief. During the war he was a fire fighting instructor at Ft. McHenry, Baltimore. He has been a member of the Florida State Firemen's Association for 25 years and has graduated from several fire training courses.

Costly Fire Destroys Middletown Arena—Hotel Saved

Three fire departments combined to battle a roaring fire that destroyed the Arena Reservation Center, Bowling Alleys and Roller Skating Rink, across from Atlantic Beach, in Middletown, R. I. on January 3, 1953. Loss was given as $220,000.

Fire, cause unknown, was discovered by a mailman shortly before 7:00 A.M. in the midst of a downpour of rain. According to Middletown Fire Chief

(*Continued on page 166*)

Deputy Chief Harry Johnston, head of the Bureau of Fire Prevention, Milwaukee Fire Department, demonstrates one of the hazardous lacquer hair sprays encountered by the nation's fire fighters, who sounded warnings to women and urged labeling of such products as "dangerous."

Short Cuts and Gadgets

THE LOFTUS SUCTION COLLECTOR

Editor's Note: **Although the Loftus Suction Collector was first mentioned in FIRE ENGINEERING of September, 1951 (page 756), no detailed description of this device has as yet been given our readers.**

Tests held during large-scale civil defense operations in the New York metropolitan area during 1952 provided ample opportunities for fire fighters to experiment with the Loftus Collector and to gauge its effectiveness in major fire control operations. These experiments, together with the previous brief mention of this device, resulted in numerous inquiries for the details.

In response to these requests, and to bring this product to the attention of the fire service generally, the editors have requested—and received permission of—the editors of *WNYF*, the official publication of the New York Fire Department, to quote liberally from its account of the Loftus Suction Collector, published in its April, 1951, issue.. Special appreciation is expressed, also, for permission to use the original illustrations contained in the *WNYF* description.

The Loftus Suction Collector was indirectly the outcome of the Holland Tunnel Fire of May 13, 1949 (see FIRE ENGINEERING, June, 1949, p. 416), at which approximately twenty vehicles, ranging from trailer-trucks to passenger cars, were destroyed. In addition, 600 tons of concrete were blasted from the Tunnel ceiling.

The New York Fire Department responded after the initial explosion of a truckload of chemicals and fought a gruelling battle with the fierce fire for two hours, all under the bed of the Hudson River just past the center of the Tunnel on the up-grade toward the New Jersey portal.

After two hours of struggle, New York fire fighters subdued the fire and emerged at the Jersey portal, a distance of three-quarters of a mile—that is, all those who were not incapacitated by the heat, smoke and gases generated in the tube. Chief Peter Loftus was in command of that haggard force which straggled out on the New Jersey side.

Battalion Chief Gunther E. Beake later died as a result of the inhalation of deadly fumes created by this fire; many more officers and men who participated claimed injuries from the same cause.

In the course of operations at this fire it was found impractical to concentrate the total water supply of the lone 6-inch tunnel standpipe main at a single point of operation. Although the tunnel pumps were connected to ample suction, with a capacity of 1,200 GPM, the pressure was restricted to a mere 120 PSI because of the limited strength of the Class C standpipe. With the conventional single suction from the 2½-inch tunnel standpipe outlet, the best that could be obtained from this water main was approximately 600 GPM. Such a quantity fell far short of filling the requirements of a single first size (1,000-gallon) pumper and, in fact, was insufficient for two hand streams of the calibre necessary for successful operations on this fire. A stream with a reach of from 60 to 75 feet, requiring nozzle pressures of 60 PSI or better, was necessary because of the great heat.

After the fire was extinguished, much thought was devoted to a solution of the basic problem of getting maximum efficiency from the tunnel's water supply. Since the standpipe capacity was 1,200 GPM and in view of the fact that only about one-half that amount could be suctioned out due to the various limiting conditions, the problem arose of how to take suction from various independent sources and combine them to deliver a full supply through a single first size pumper.

Hence, the Loftus Suction Collector was developed.

On his visit to the British Isles, subsequent to the Holland Tunnel fire, Chief Loftus had opportunity to inspect the fire-fighting techniques employed abroad, and in London he saw an appliance somewhat similar to the Suction Collector, but with fewer 2½-inch inlets. After his return home, Chief Loftus fashioned a preliminary model of the Collector from which plans were drawn and a pattern made at the New York Fire Department Shops, under direction of the Chief, who prepared the specifications. Various officers and members of the Department as well as manufacturers' representatives, assisted in making drawings, patterns, and castings, and their finishing.

Description of Device

The Loftus Suction Collector is simply a large, multi-inlet siamese. The ordinary siamese blends two weak streams into a single strong stream. The Collector feeds water from several sources, through six 2½-inch inlets to the 4½-inch intake of a pumper. Each individual source of water may be weak and inadequate of itself but all the available sources, "collected" into a single source by this appliance, provides the pumper with a plentiful volume of water.

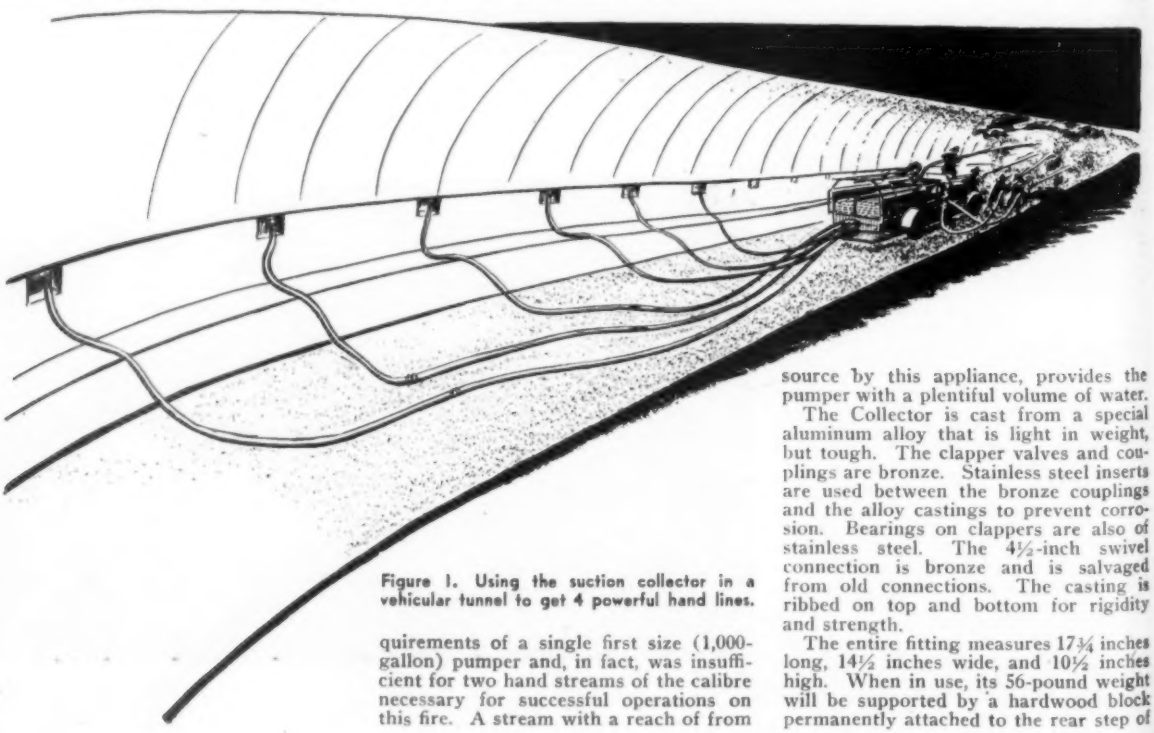


Figure 1. Using the suction collector in a vehicular tunnel to get 4 powerful hand lines.

The Collector is cast from a special aluminum alloy that is light in weight, but tough. The clapper valves and couplings are bronze. Stainless steel inserts are used between the bronze couplings and the alloy castings to prevent corrosion. Bearings on clappers are also of stainless steel. The 4½-inch swivel connection is bronze and is salvaged from old connections. The casting is ribbed on top and bottom for rigidity and strength.

The entire fitting measures 17¾ inches long, 14½ inches wide, and 10½ inches high. When in use, its 56-pound weight will be supported by a hardwood block permanently attached to the rear step of

the pumper just below the 4½-inch suction inlet.

In preliminary tests the device withstood a pressure in excess of 400 PSI. In official practical tests in the Lincoln Tunnel, a 5-inch tunnel standpipe delivered as high as 1,460 GPM to a single 1,000-gallon pumper through 2½-inch hose lines from six standpipe outlets (Fig. 1). The Collector was also used at a five-alarm Brooklyn pier fire on Dec. 16, 1950, with excellent results.

Other Uses

In addition to the use of the Collector in a possible tunnel fire, there are many firefighting situations where this fitting may be placed in service to good advantage. A few of these uses are set forth in the accompanying diagram and explanation.

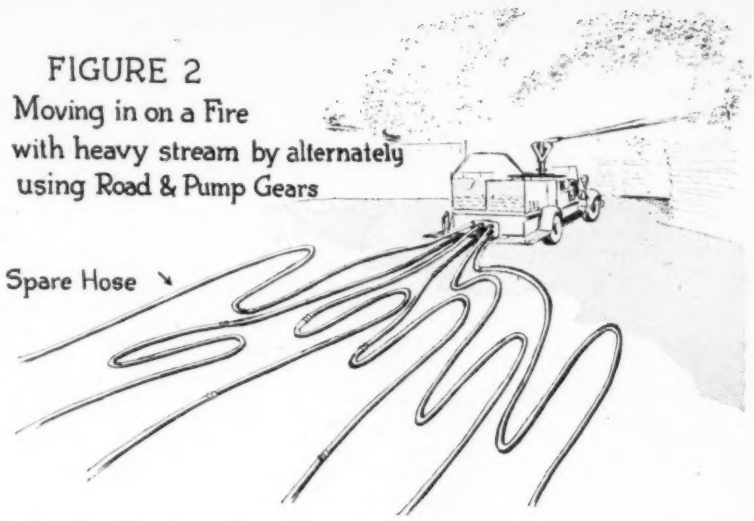
When the supply is from a 6-inch tunnel main, or other long, small main, nozzles should be closed slowly. This would prevent possible damage to the main as a result of water hammer.

1. A fire on a pier, in a lumber yard or other large outdoor area (Fig. 2). Six hose lines from hydrants or from other pumpers, lead into the rear suction port of a single 1,000 GPM pumper. The pumper then moves along the fire front, alternating between road and pump gears, and blasting 1,200 to 1,500 gallons per minute through a deckpipe stream with a reach of 250 feet. The six suction lines include spare hose so that the men may "lighten up" on the charged lines as the pumper moves in on the fire.

2. Relaying water with the Collector (Fig. 3). Four or more supply lines extend from the pumper at the source of water to the suction inlet of the pumper nearer the fire. The check valves on the 2½-inch inlets of the Collector will prevent any leakage as the additional supply lines are connected. The discharge lines are stretched from the pumper nearer the fire as soon as the supply lines are in service. In a particularly long relay these discharge lines may lead to the suction inlet of a third pumper.

(*Continued on page* 165)

FIGURE 2
Moving in on a Fire with heavy stream by alternately using Road & Pump Gears



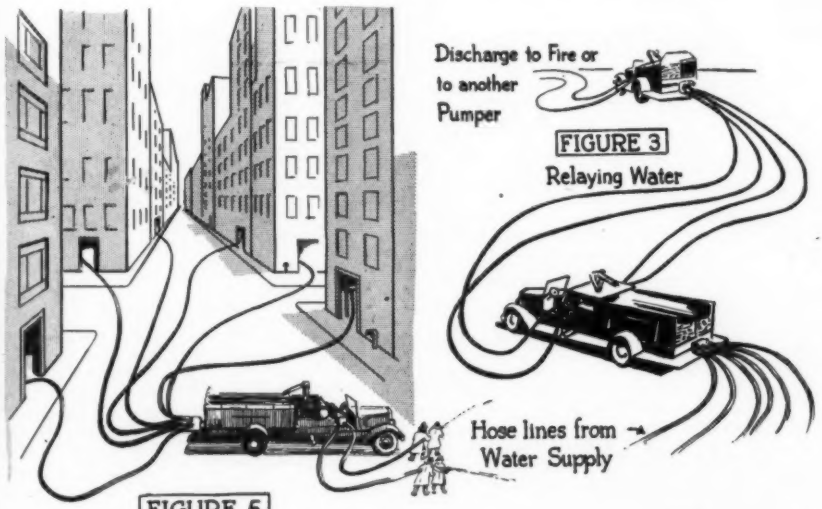


FIGURE 3
Relaying Water

FIGURE 5
Using Standpipe Tanks from Several Bldgs. Connections made to riser outlets.

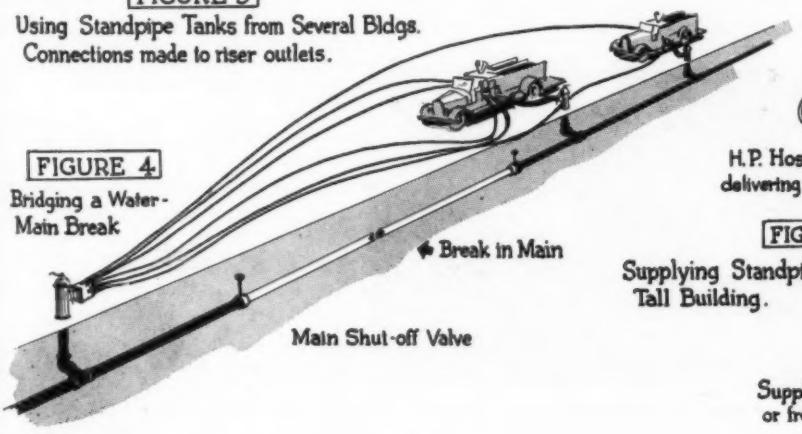


FIGURE 4
Bridging a Water-Main Break

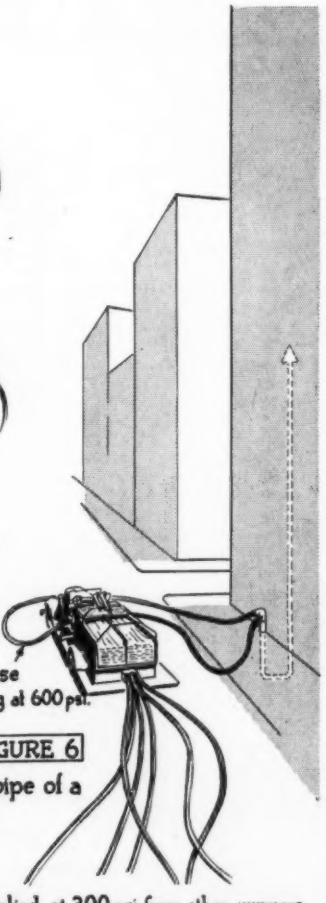


FIGURE 6
Supplying Standpipe of a Tall Building.

News of the Manufacturers

New Fire Safety Suit Has Features

Safety suits for fire department and air crash use are not new. For years, safety engineers, particularly those in the Armed Forces, have labored to develop the "ideal" protective garment.

A number of these suits have been pictured and described in FIRE ENGINEERING. Now comes another suit which recently was put through its paces at the New Haven Fire Department Training Grounds.

Newly developed heat insulating suit for fire fighters.

According to Fire Chief Paul P. Heinz, who with his chief aides Assistant Chief Thomas Collins and Battalion Chief Andrew Flanagan conducted the tests, the garment should find a ready place in the fire service.

The product is made by the Industrial Safety Specialties Co. Sellersville, Penn., and embodies the latest safety insulating features. The suit, which can be put on in less than a minute, is made of layers of aluminum foil, fibre glass and asbestos. It has three parts which are integral in use: the pants and boots, the tunic and gloves, and the hood and helmet. The visor is of heat resisting glass.

Although the suit appears bulky, it is amply large to be donned over a fireman's uniform and boots and give free play to legs and arms, and there is room within for self-contained breathing equipment which is usually necessary where the wearer must enter areas having high heat and oxygen deficiency.

One photo shows New Haven Fireman Clifford Lynch adusting the suit which enfolds Harmar Lutz, head of the manufacturing company; the other shows Mr. Lutz walking through a pit of fire. The tests which were held to determine maneuverability and comfort, as well as safety features were conducted on the testing grounds before a number of witnesses including Fire Chief Walter Flores of Allentown, Pa., who, with one of his men, Fireman Fred Weinsheimer, used the garment.

In one test Chief Flanagan remained for some minutes on the perimeter of a fire involving 2,000 gallons of oil. The temperatures ranged from 800 deg. F to 1,800 deg. F. Both Chief Flanagan and Fireman Weinsheimer passed through actual flames in another outside test. In a third test both men, wearing the suits, remained for a short time in a closed test structure in which heat registered on the thermocouples as high as 600 deg. F. Neither man wore breathing equipment and such reported no inconvenience. They kept in touch with the outside by means of a portable telephone set.

Motorola Announces New Subsidiary

Paul V. Galvin, President of Motorola, Inc., has announced the organization of a wholly owned subsidiary corporation, Motorola Communications and Electronics, Inc., to serve more effectively Motorola users of complex communication systems.

The new company will distribute products manufactured by the Communications and Electronics Division of the parent corporation. These products include complete mobile two-way radio systems, multi-channel microwave relay systems, power line carrier, supervisory and industrial control equipment.

No change is contemplated in the field sales personnel for these communication products as a result of the organization of the new company, and the operations of the other divisions of Motorola are not affected.

Savealife Fire Alarm System

"Savealife," reported to be a low cost, completely electrical, automatic system of fire alarm notification, has recently been introduced.

The system is based upon heat-sensitive detector elements, located at various points of fire-hazard, which record temperature rise and sound a warning on inside bells and outside gongs. It operates on regular household current or battery. Automatic switch-over to battery is possible if central station power fails. A test button is provided to test system, or for use in home fire drills. The system is reported approved nationally for F.H.A. title home-improvement loans.

Inquiries concerning "Savealife" should be directed to Savealife, 427 South Western Ave., Los Angeles 5, Calif.

Testing fire resistant suit in pit of burning oil.

Alexander Now Quaker Rubber S.M.

Appointment of J. R. Alexander as General Sales Manager, Quaker Rubber Corporation, Division of H. K. Porter Company, Inc., Philadelphia, was announced recently by T. M. Evans, President.

J. R. Alexander

Mr. Alexander, who has been with Quaker since 1944, will be in complete charge of the company's sales activities. He came to Quaker as a sales representative and has been successively City Sales Manager and District Sales Manager, until his present promotion. He was also instrumental in establishing the Detroit Sales Office and Warehouse of which he became District Manager.

Previously Mr. Alexander occupied various sales positions with The Glidden Company after graduation from Kenyon College in Ohio.

Maxim Aerial for Redwood City

Redwood City, Calif., recently purchased and accepted delivery of a 75-foot, all-hydraulic steel aerial ladder truck built to their specifications by the Maxim Motor Company of Middleboro, Mass. The unit is white, the standard fire department color of fire apparatus in Redwood City.

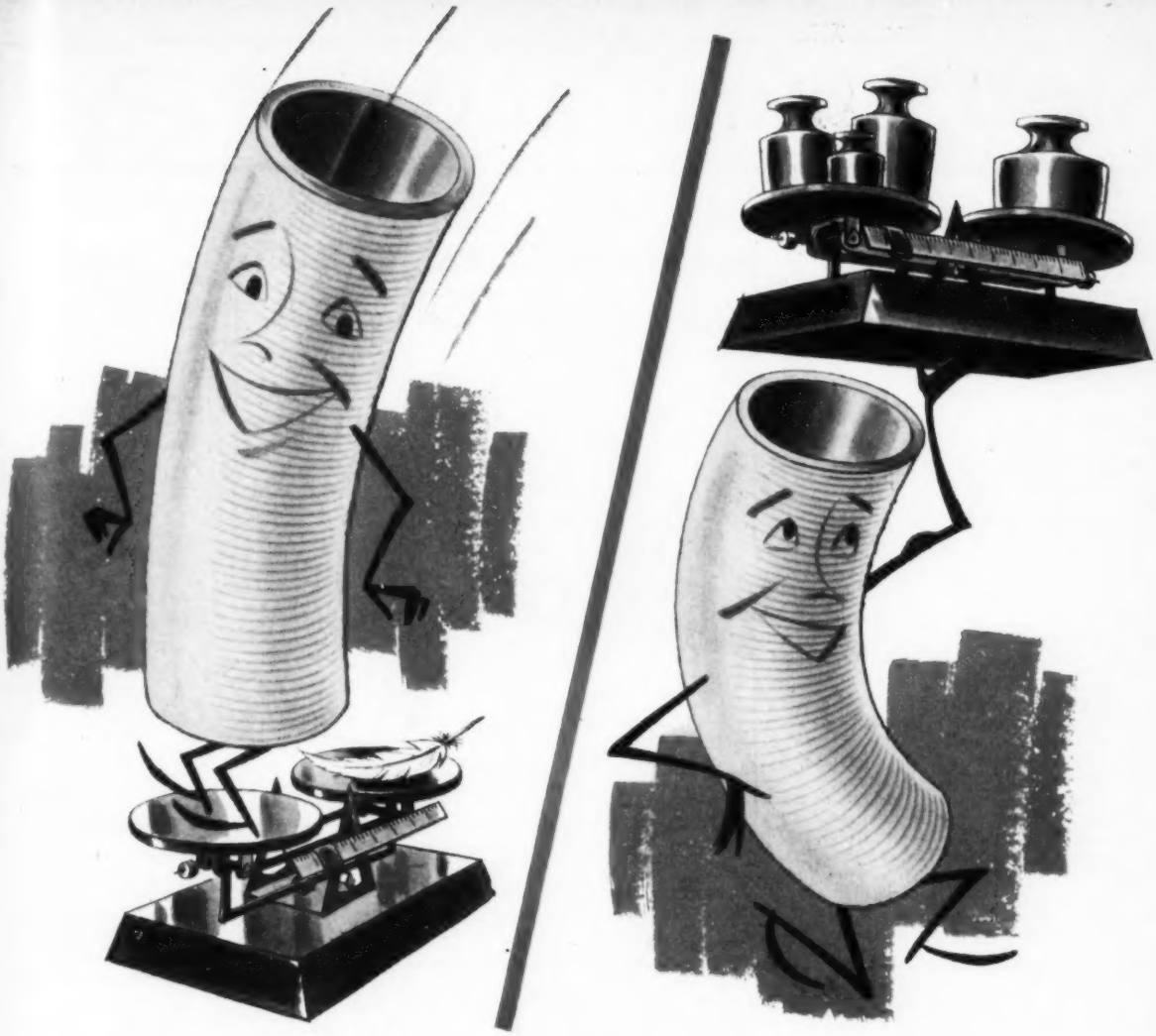
Many Saved at Rest Home Fire

When fire struck the Cox Rest Home for the Aged, at Milford, N. H., on December 18, nineteen guests, all over 80 years of age, were rescued by volunteer firemen. Some were led to safety, but the majority had to be carried out by firemen wearing demand type respirators.

The local newspaper, "The Milford Cabinet," had the following to say editorially regarding the work of the firemen:

"Fire fighting equipment cannot prevent fires, but it can keep fires such as the one at the Cox rest home Tuesday night from developing into utter tragedies. No one who watched firemen enter the building, while choking smoke poured from the windows, can doubt the value of the Scott Air-Paks. When

(*Continued on page* 160)



Lightweight...but strong!

Eureka's Vulcan Brand has a jacket of cords that are lighter, stronger than those in standard hose—with *no loss* in burst-resistance.

Vulcan is so flexible you can easily tie it in a knot. It is easier to carry or drag, cuts writhing and whipsawing to a minimum.

As in other famous brands of Eureka Fire Hose, Vulcan's Balanced Weave and Controlled Curing eliminate excessive warping and stretching. Exclusive Formula "X" provides mildew-proofing. "Bomb-Tested" Linings insure long, dependable life.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875. Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York 13, N. Y.

Division of United States Rubber Company

FALSE ALARMS

A woman missed her gloves as she was leaving the restaurant where she had dined with her husband. Asking him to wait, she hurried back to look for them, searching first on the table and finally lifting the cloth to peer under it.

Just then a waiter hurried up to her. "Pardon me, madam," he said, "but the gentleman is over there by the door."

It was 1:00 A.M. when the sedan weaved to a stop in front of a white stucco on Eighth and Maple and two wobbling gents dragged a third from the car.

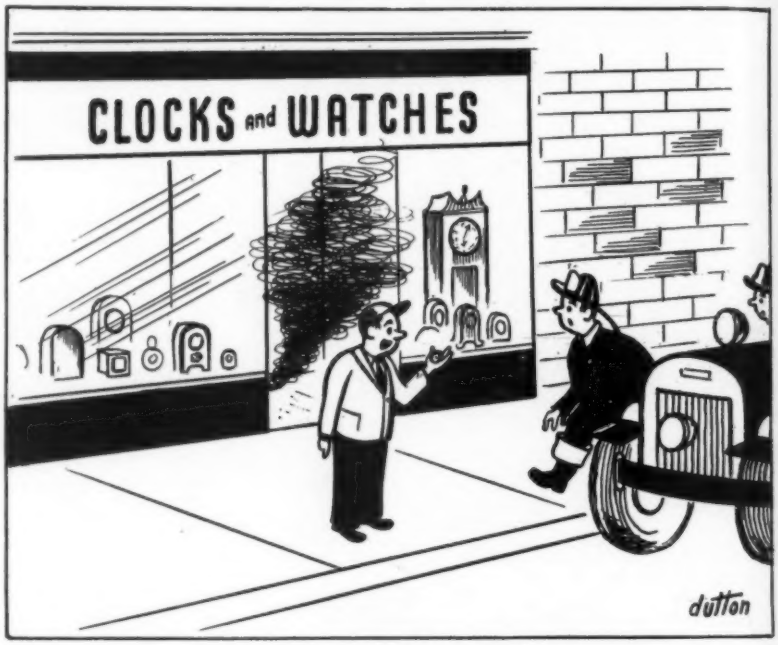
The porch light snapped on and the stout lady under it called, "Don't bring him in here! He lives in the white stucco on Ninth and Maple."

Proudly she added, "My husband's a truck mechanic. He's a handsome and much stronger man—and they won't be luggin' him home for a good two hours yet!"

A minister who was conducting the funeral of the town wastrel was attempting to find something upon which he could base at least one or two commendatory remarks.

It occurred to him to scan the floral wreaths with their cards of sympathy, and he was particularly hopeful of what he would find on the beautiful floral pieces sent by the boys from the fire department where the deceased had been a volunteer fire fighter.

But alas, he was sadly disillusioned. Worked neatly into the design of the red roses was this statement: "Gone to his last fire."



"You made good time—169 seconds!"

"Says he won't leave without his masterpiece!"

Hard Bargainer

John had been courting the fair Mary for two years. One evening after he had been silent for several minutes, Mary murmured, "A penny for your thoughts, John."

"Well," replied John with sudden boldness. "I was thinkin' I'd like tae kiss ye, lassie."

Mary blushed happily as the moment of bliss took place, following which John once again lapsed into another period of prolonged silence.

"An' what are ye thinkin' about noo, John?" asked the love-smitten girl hopefully. "Anither?"

"Na, lassie; it is mair serious this time. I was just wonderin' when ye were goin' tae make good on your word and pay me that penny for ma thoughts."

Two small boys were swinging on a gate together, passing the time of day. In the course of their conversation one asked the other, "How old are you?"

"Five," came the reply. "How old are you?"

"I don't know," said the first.

"You don't know how old you are?"

"No."

"Do women bother you?"

"No."

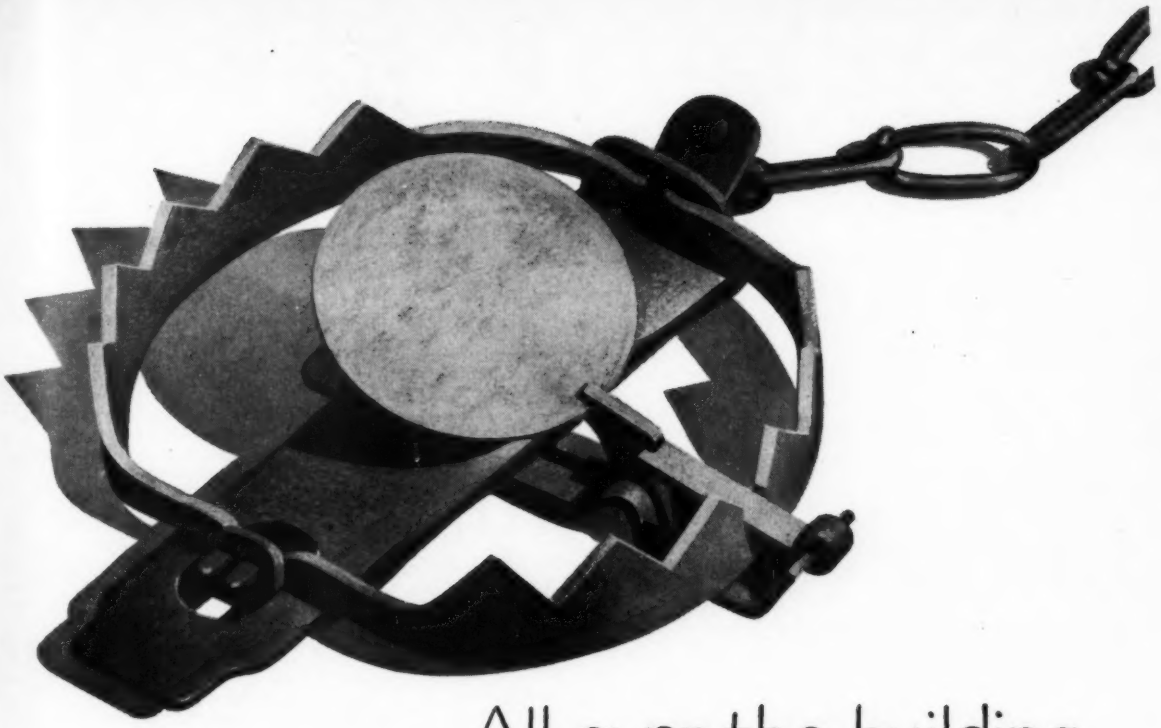
"You're four."

"F-e-e-t, what does that spell?" asked the teacher.

Johnny didn't know.

"What is it that a cow has four of and I only have two?"

Johnny's answer was as surprising as it was unexpected.



All over the building, fire sets its traps. In dip tanks, transformer vaults, storage spaces. Wherever it can stop a thriving business in its tracks. Be sure you recommend that every fire hazard be protected by a KIDDE Portable Extinguisher

Kidde

Walter Kidde & Company, Inc.,

233 Main Street, Belleville 9, N. J.

Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

Among the Buffs

By Paul C. Ditzel

CALIFORNIA, the state where almost anything can happen and usually does, now boasts a women's fire department.

Fantastic? Not if you could see the 21 women of the Chino Women's Fire Department. You buffs probably could learn a lot from these gals as they drag heavy hoselines, scamper up ladders and go through the regular fire evolutions.

Chief of the department is Mrs. Lilliam Muriset, and she says her fire district takes in 96 square miles, mostly rural. Many of Chino's fire calls are for grass fires which the men in the fire department take in. They save the women for the big stuff. While the men are off fighting those stubborn grass fires, the women take over at the main station. The gals man the radios and fire phones.

If the fires last for a prolonged period of time, the women rush coffee and sandwiches to the menfolks. The women, who wear miniature badges, have raised money by benefit dances and bake sales to buy first aid equipment, resuscitators and a large coffee urn.

Bless their hearts! Or is that too sissified for a unique women's fire department?

Letter from Walter Duffett, 249 Walnut St., Brookline 46, Mass., wants to know what's with the manifold duplex rigs which are peculiar to Los Angeles. I'm planning to do a *Fire Engineering* feature on the manifold duplex equipment in the near future. In the meantime, Walt and others who have inquired about these manifold duplex rigs might look up a recent Fire Fan Register which carried an excellent article on the equipment, plus some excellent photos.

On Christmas Eve in Los Angeles, the department was called upon to battle a three-alarm blaze in a plastics warehouse and plant in the Fourth Battalion. Three wagon batteries were put into operation at the fire, a unique sight insofar as Los Angeles operation is concerned. One of the manifold duplex rigs was in operation at this fire and gave the usually good account of itself. Members of the Box 15 Club turned out for this nighttime blaze, including Radio Expert Gene Burt, Smoky Bass, Dick Lindberg, and Former New York Fire Bell Club Member Fisher.

The Box 15'ers send along their new publication, "The Speaking Trumpet" edited by Bob Olson. Co-editor is Dale Magee, whom you'll remember did such a bang up job on photography for the Fire Fan Register. The editor of the Trumpet says he'll be glad to put you on his mailing list for free.

"Send us your items of interest about your fire departments, their equipment and their fires," says Editor Olson throwing open the newspaper's columns to all comers.

Box 15 members have certainly been getting the publicity, both in the Los Angeles area and nationally. Chief Engineer Glen Alton of the club was featured in the "Interesting People" section of the November, 1952, issue of American Magazine. Then he was seen nationally over the CBS Television Network on Art Linkletter's House Party. Then, Glen and members of the club were invited to appear on Leo Carrillo's Dude Ranch Varieties, a local television program. About this time some newspaperman by the name of Paul Ditzel got into the act by doing a story and a full page of pictures on Glen.

Top VIP visitor during the month was Bill Crispin, Schenectady, N. Y., who was here on business for the General Electric Co. Bill had a car at his disposal but I doubt whether he caught a run while he was here in Hollywood. Bill looks back on his college days when he was a Boston spark and has his radio tuned to the coded signals of the Boston Fire Department.

Bob Freeman, 3641 N. Olcott Ave., Chicago 34, Ill., is still looking for fellow enthusiasts who'd like to trade pictures and fire information on Chicago. Bob brings me up to date on Chicago happenings and says there's going to be a new station built on the northwest side for Engine 130 and Truck 56, both new companies.

Steve Lasker, top news photo cameraman for the National Broadcasting Co. in Chicago, sends along his latest information. Steve was the first fotog on the scene when a furniture store exploded on the city's southside. Six persons were killed and the resulting fire went into a 5-11 and 1 special, according to newspaper reports.

Don Loeffer, 1218 Lafayette St., Elkhart, Ind., reports on other news in the midwest.

"Lot of new improvements in the northern Indiana area lately," writes Dick who is just back from Korea. "Was over to Mishawaka a couple of weeks ago where the central fire station is just about complete after an extensive remodeling. This remodeling job, incidentally, includes the replacement of

CRACKERJACK

MUNICIPAL FIRE HOSE

NONE BETTER

. . . the noticeably better performance of American Fire Hose is the result of skillful, painstaking manufacture. American does not compromise with quality — as a result critical buyers eventually standardize on American.

LAMINATED CONSTRUCTION

5 . . . calendered sheets

OTHER AMERICAN BRANDS

WHITE	*TREATED
Crackerjack	Arcolized
American	Arcolized
Municipal	Arcolized
Tiger	Arcolized
Underwriters	Arcolized

*Treated against mildew and rot; water repellent.

FLEXIBLE . . . balanced weave and premium yarn assure greatest strength and flexibility.

SMOOTH WATERWAY . . . lowest possible friction loss.

DEPENDABLE . . . unsurpassed for ruggedness and long life.

LOWEST COST PER FOOT PER YEAR

AR-2

ASK FOR BULLETIN

Descriptive literature is available on American Fire Hose — ask for your copy.

THE American RUBBER MANUFACTURING CO.

Factory and General Offices: 1145 Park Avenue, Oakland 6, California, Phone: Olympic 3-0800

Branch Offices: SEATTLE, Smith Tower, Phone SEneca 1727; PORTLAND, Jackson Building, Phone CApitol 1788; SAN FRANCISCO, 7 Front St., Phone SUtter 1-0660; LOS ANGELES, 711 E. Sage Ave., Phone ADams 1-9279

THE AMERICAN RUBBER MFG. CO. OAKLAND CALIF.

Write for name and address of your nearest American Distributor

New Orleans chooses

This new FWD will protect valuable waterfront facilities as well as the many architecturally famous buildings in New Orleans. Traction problems are frequently encountered in this area, but FWD pumpers are never hampered by these conditions. That's why New Orleans chose an FWD.

The New Orleans fire department selected a Model F75T with a 200-gallon booster tank. It is equipped with a 2-stage centrifugal pump, delivering 750 gpm. Hose reel capacity: 200' of 3/4" hose. Also included: 2 lengths hard suction hose (5" x 10') plus auxiliary equipment.

Choose the Added Protection of Extra Traction to protect your community

Throughout the nation, the trend is to FWD Fire Engines. In both rural and urban communities, crews know they can depend on four-wheel-drive traction to help save time on every run. FWD provides maximum safety for crews, equipment *and* other vehicles. FWD equipment and accessories also deliver extra action and dependability at the blaze.

See the types of FWD equipment selected by scores of communities. Write for the new book — "FWD Fire Engines." It pictures and describes the types of FWD equipment selected by many typical progressive communities. Helps you select equipment for your specific needs.

THIS IS WHY YOU NEED FWD EXTRA-TRACTION

SAFER CONTROL IN TRAFFIC — Start faster. Positive control permits greater speed. Avoid accidents because 4-wheel-drive assures superior steering.

REACH OUT-OF-THE-WAY PLACES — Get through to water supply in hard-to-reach sections. Drive over terrain that stops the conventional fire truck.

FULL CONTROL ON SNOW AND ICE — With front wheels pulling and back wheels pushing—drive swiftly, safely over icy or snow-blocked streets and roads.

STEEP GRADES, MUD, SAND NO OBSTACLE — Drive hub deep through sand or mud. Pull up steep, slippery grades without losing speed. Save valuable time.

Built by the Makers of America's Foremost Heavy-Duty Trucks

THE FOUR WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS., *Canadian Factory:* KITCHENER, ONT.

Were these lives worth the price of two SCOTT Air-Paks?

Mrs. Ida W. Reynolds
97 years old

MILFORD, N. H., THURSDAY, DECEMBER 18, 1952.

Tragedy Averted as 19 Are Saved from Cox Home Fire

If there can be a bright side to the tragic fire which drove 19 elderly residents of the Cox Rest Home into the street Tuesday night, it is that "things could have been so much worse."

Within minutes of the time Mrs. Ralph J. Cox noticed smoke coming from the basement and telephoned the alarm the house was filled with a thick, choking smoke and a number of the residents, all of whom were more than 80 years old, had to be carried from the house by firemen wearing Scott Air-Paks. The fire was discovered shortly before 8 p. m. If it had broken out late at night when everyone was asleep, or if firemen had failed to respond quickly with the proper equipment, it could easily have become a major tragedy.

There was damage from fire, particularly near the kitchen, and a great deal of damage from smoke and water. While the extent of the loss was still being determined today, and insurance adjusters were going over the building, it was believed certain to be at least "several thousands of dollars."

Wiring Blamed

Fire Chief Paul N. Hutchinson placed the blame on wiring, or an electrical fixture in a small room in the basement used for drying clothes, although admitting it was hard to point to the exact spot where the trouble started.

Firemen said construction of the house is such that shafts carried the smoke from the basement to the attic and the kitchen.

Residents Removed

Some of the 19 Cox Rest Home residents were able to walk to safety, but others had to be carried by firemen and volunteer assistants, or helped out of the house which was rapidly filling with smoke. They were taken to the homes of relatives and neighbors, and some went to the Liberty rest home on Elm street with the aid of ambulances and police.

Last resident of the home to be rescued was 97 year old Mrs. Ida W. Reynolds. Mario Infanti and Domenick Calvetti, wearing the fire department's Scott Air-Paks, were making a thorough check of the bedrooms. By that time smoke had reduced visibility to almost zero, and they had to feel each bed and make a groping search of the rooms. They had searched Mrs. Reynolds' room and concluded it was empty when they heard a sound from the floor and turned back to find the elderly woman where she had apparently fallen from the bed. She was taken to a waiting ambulance and appeared not to suffer greatly from her experience.

The firewards have expressed their appreciation for the help given by volunteers in carrying out the rescue.

Emergency Coordination

The fire did demonstrate a well-coordinated disaster organization in town, that certainly relieved the discomfort and danger of the situation. The Scott Air-Paks, bought over the last two year period by the fire department, proved their value.

From Editorial Page ▶

Milford Fire Chief
Paul N. Hutchinson

See opposite page for more information about Scott Air-Pak.

THE EQUIPMENT WAS READY

Fire fighting equipment cannot prevent fires, but it can keep fires such as the one at the Cox rest home Tuesday night from developing into utter tragedies. No one who watched firemen enter the building, while choking smoke poured from the windows, can doubt the value of the Scott Air-Paks. When the emergency came they were ready, the firemen knew how to use them, and they prevented what could easily have been a major disaster.

The least we can do is pass along an editorial Thank-you to the firewards who recognized a need and saw to it that the equipment was on hand when it was needed.

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

215 ERIE STREET — LANCASTER, N. Y.

Canada: Safety Supply Co., TORONTO — BRANCHES IN PRINCIPAL CITIES

Export: Southern Oxygen Co., 157 Chambers Street, New York 7, N. Y.

all poles with slides. They're a steep, spiral affair something on the order of the slide fire escapes, only considerably steeper and of course much faster. From the way the boys over there tell it, the new slides are just as fast as the old poles and will put a fellow downstairs a lot safer."

From South Bend, home of those fighting Irish, Dick reports:

"South Bend is establishing a two-way radio system between stations and the alarm office. Intend to use it as a "talker" system, dispatching by air instead of by wire. This is in addition to the two-way system already on the apparatus. Next thing along the line will probably be jet-propelled pumpers!"

Who said the midwest is conservative?

Dick's working now for American District Telegraph as an installer. "Gets pretty darned interesting once in a while, especially on a sprinkler job," he says.

Keep those anecdotes rolling westwards, fans. I'm still running out of 1246 Tamarind Ave., Hollywood 38, Calif. My telephone number is Hudson 2-8577 and during the day you'll find me hiding behind the Los Angeles Daily News rewrite desk.

Good Salvage—Good Public Relations

The value of painstaking salvage operations as a good will builder has been proved in many fire departments. Here is a copy of a letter to Chief Donald S. Charles of the Charlotte, N. C., Fire Department from Robert S. Page, President of the Henry Walke Company, which provides further proof:

"My Dear Chief Charles: I wish to express to you, and through you to all of the members of the Charlotte Fire Department, our sincere appreciation for the very efficient work done by your Department in the very disastrous fire we had at 1310 South Tryon Street at 2:30 a.m. December 19, 1952. Had the fire not been confined to our offices, store and machine tool display room, which inflicted a loss of approximately $100,000, but had been allowed to spread to our main stock room in the rear of the warehouse, several hundred thosand dollars more damage would have been done.

"The day after the fire the Chief of the Norfolk Fire Department dropped into my office. . . . We were talking about the fire and he said the Charlotte Department had really done an excellent job in confining the fire. We were particularly impressed and pleased with the work of your Salvage Crew as a very thorough job was done."

D. C. Spencer.

New Mexico Fire Departments Meet

On January 19th, representatives of twenty-six New Mexico departments met in Albuquerque, to discuss proposed legislation regarding a full-time fire department instructor for the State. Plans for the 1953 convention and fire school to be held in Raton, N. M., on June 8-10, were also discussed. F. W. Wynn, Hobbs, N. M., is Secretary of the New Mexico State Firemen's Association.

Ted Rosenwald

(Above) — Ready to go! Scott Air-Paks assure ½ hour minimum duration at extreme exertion. Weight as worn, 29½ lbs.

Greensboro's Fire Chief, C. W. Wyrick, relies on SCOTT AIR-PAKS. With Air-Paks, his men get through smoke to the source of a fire *fast*, before intense heat or crumbling buildings make it impossible. SCOTT AIR-PAKS slip on in seconds, supplying fresh, cool air and relaxed breathing to firemen . . . no matter how tough the going.

Thousands of other forward-looking fire chiefs are using SCOTT AIR-PAKS to eliminate the dangers of breathing hazards.

Give your department this protection by asking your Scott Distributor for a FREE DEMONSTRATION now.

For full details on Scott Air-Pak Safety Breathing Equipment, WRITE TODAY for Bulletin 510.

ESTABLISHED IN 1932
Scott
FOR SAFETY—FOR SERVICE

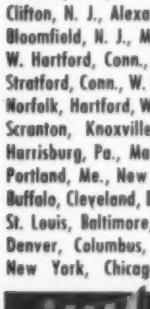
SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
215 ERIE ST. LANCASTER, N. Y.
Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 157 Chambers Street, New York 7, N. Y.

Can you afford the stakes?

Are you gambling the lives of your community against air raid? Are your industries the ante in the chance you take in not having an adequate air raid warning system?

These communities, some *smaller*, some larger than yours, have taken no chances that the "cold war" will stay cold—they have partial or complete Federal Civil Defense Warning Systems.

Chatham, Mass., Brielle, N. J., Coatesville, Pa., Meridian, Miss., San Mateo, Cal., Petersburg, Va., Wilmington, N. C., Montclair, N. J. Mamaroneck, N. Y., Newport, R. I., Birmingham, Mich. Wildwood, N. J. Union, N. J., North Adams, Mass., Tonis River, N. J., Tiffin, Ohio, High Bridge, N. J., Berlin, Conn., Milford, Conn., Pearl River, N. Y., So. Windsor, Conn., Oswego, N. Y., Ravenna, Ohio, Livingston, N. J., Cocoa, Fla., Gloucester, N. J., Ft. Crook, Neb., Lansdale, Pa., Somers, N. Y., Hudson Falls, N. Y., Maplewood, N. J., Franklin Lakes, N. J., York, Pa., Owosso, Mich., Larchmont, N. Y., Toronto, O., Camden, N. J., New Bedford, Mass., Paterson, N. J., Clifton, N. J., Alexandria, Va., New Rochelle, N. Y., Bloomfield, N. J., Meriden, Conn., Haverhill, Mass., W. Hartford, Conn., Fargo, N. D., Newburgh, N. Y., Stratford, Conn., W. Orange, N. J., E. Hartford, Conn., Norfolk, Hartford, Wichita, Tacoma, Albany, El Paso, Scranton, Knoxville, Duluth, Utica, Lynn, Mass., Harrisburg, Pa., Marin County, Cal., Burbank, Cal., Portland, Me., New Britain, Conn., Bethlehem, Pa., Buffalo, Cleveland, Boston, Milwaukee, New Orleans, St. Louis, Baltimore, Seattle, Newark, Indianapolis, Denver, Columbus, Erie, Providence, Richmond, New York, Chicago, Philadelphia, Los Angeles,



Should you choose large or small sirens?

Mathematical theory indicates that a large siren will replace a number of small sirens, but actual installations show that this is not so. Unless large signals are properly supplemented and balanced by small ones, your protection is inadequate. Federal systems give complete protection. Write today!

FEDERAL ENTERPRISES, Inc.

Formerly: Federal Electric Company, Inc.

8702 South State Street Chicago 19, Illinois

The WATCH DESK

Overhauling the firemanic news of the day

by J. C. B. McCLELLY

Chief Has a Real "Beef"—About 10 Tons Worth!

Fire Chief J. W. Greeno, of the Rural Fire Protection Association, Longmont, Colo., isn't particularly beefing about it, but he's a bit fed up with sirloins-on-the-hoof.

He says that in his 15 years as a fireman he's answered a lot of odd emergencies but that of Monday night, January 12, took the cake—and the steak.

Interrupting his evening meal, the station informed him there were around 40 head of yearling beef cattle that had broken through the ice on Dodd Lake, which is located at Newat, a small village about 8 miles from Longmont. Would the Chief please come over and save the round steak!

The chief gulped the last of Mrs. Wife's victuals and organized the rescue effort, including firemen, police, the department's rescue boat and tackle, etc., and took off for the Lake.

On arrival, sure enough, out in the Lake were 42 white-faced yearlings fighting to keep afloat. The ice was about 4 inches thick but rotten from several days of mild weather.

The mobilized firemen, farmers, police and other volunteers went to work. Men slid and crawled over the ice, pushing the boat ahead of them, to open water, and soon were in the process of dragging to shore, one at a time, 23 live 'sirloins' who weren't exactly happy about it all—even the fact they were being rescued. Of these 23, 19 were saved alive, and the rest became the property of the rendering works.

The task was tough and lengthy. Several of the rescuers, including the Chief, received a dunking in the icy water during the operation, which took from 6:10 P.M. to 10:30 P.M.

Fortunately, said the Chief, the temperature was unusually warm for the time of the year and they were able to save about $2500 worth of "steaks on the hoof." The owner of the herd was grateful for the efforts at rescue but one fireman went on sick leave and the rest of the crew, including the Chief "don't feel so hot." However he says, "Beef or no beef" it shows that there's still some good in all men, that they are willing to get out and help a neighbor when he is in trouble."

* * *

The Ways of Justice Are Puzzling

On December 24, last, the City Court in Rochester, N. Y., suspended sentences for two youths—teen-agers, but old enough to know better, who were arrested the day before, and released on $500 bail for admittedly turning in 16 false alarms since November 1, 1952.

They were captured after 50 policemen and firemen, aided by civil defense workers, spread a dragnet in the Park ave. area the previous night. Before they were caught, however, at 9:30 P.M., they reportedly pulled five false alarms which committed a total of 15 pieces of fire apparatus and forced Fire Chief John Slattery to restrict movements of apparatus to a single engine per call.

The use of invisible fluorescent powder was instrumental in convicting the youths, who were caught by Detective Sgt. Thomas Van Auker and Fireman Joseph Nalore of the Arson Squad after the offenders were chased from a backyard near Canterbury Rd. and Vassar St., but lost by the pursuers as they took to bicycles. The cycles later were located at the home of one of the culprits. When the lads were confronted with the evidence on their hands, they confessed and were held for $500 bail for appearance the next day on malicious mischief charges.

The first of the five alarms pulled on the 23rd brought Public Safety Commissioner Kenneth C. Townson to the scene on Ladder 4, which responded. He was soon joined by Chief Slattery, Police Chief T. Herbert Killip, and other fire and police officials. Extra police were detailed to the area; Civilian Defense workers were ordered out, along with 14 firemen, to watch fire alarm boxes. Nevertheless, between 8 and 8:03 P.M., three other false alarms were turned in. The youths had split up and were riding to different boxes on their bicycles.

The boys were finally located by Van Auker and Nalore after witnesses reported they had seen them riding away on their bikes.

Fire Engineering's anonymous correspondent sums it this way:

A THREE-ACT DRAMA ENTITLED "HOW BLIND CAN JUSTICE GET?"

*

ACT I

Scene 1—Two youths sending in 16 false fire alarms
Scene 2—An average of 44 engine and 14 ladder companies responding, with over 250 men endangered
Scene 3—"City Fathers" totaling money spent on responding companies

ACT II

Scene 1—Numerous fire and police dragnets
Scene 2—Final capture of youths

ACT III

Scene 1—Youths appear in City Court
Scene 2 (Final Curtain)—Youths handed suspended sentences—one-year probation

* * *

Hot Off the Tape

Mrs. Ralph Sawyer's insomnia saved a farm from complete destruction by fire in Gray, Mass. Mrs. Sawyer returned home from a meeting and smelled smoke. She called firemen who fought the fire and then left early in the morning. Unable to sleep after the excitement, Mrs. Sawyer again smelled smoke, this time from a second floor blaze. Her husband was able to save 20 head of cattle, two horses and all the machinery, but part of the house and a hay-filled barn went up, with $10,000 damage. (Thanks JOHN O'HEARN). . . . The records of the Mt. Morris, N. J., Fire Department show that the first alarm answered during the months of December 1950, 51 and 52 were all mutual aid alarms to other communities and were received on December 15, 16 and 17. On December 15, 1950, they went to Genesco for a fire in the business district; on December 16, 1951, they aided at a fire in Dansville and

on December 17, 1952, they assisted at a fire in Groveland. (thanks FRED BEUERLEIN) . . . In Cleveland, Ohio, while Richard Mullaly talked about fire prevention on October 2 to Cleveland Transit System personnel, Michael, his 7-year-old son set fire to the Mullaly home. . . . A minute or two after five o'clock of a Saturday morning in Whitewater, Wis., the fire siren sounded, calling the vamps to the Fardy residence, where a Ford sedan and the two-story garage were in final stages of destruction. A curious thing happened after the car was nearly destroyed. A wire shorted on the starter and caused the car to back out of the burning building. The vamps dodged! (thanks HARRY BALLOU, San Anselmo, Calif.) . . . When Freeburg, Ill., volunteer firemen held a barbecue last fall their barbecue house was burned down by the pit fire. The vamps doused the fire in 20 minutes and saved the food, but the smokehouse sustained a $1,800 loss. The pit was cleaned out and the barbecue went on amid the ruins (thanks JACK KEARNS). . . . Atlanta firemen made three runs on December 22, 1946, to the home of Mrs. J. W. L. Brannon where an overheated furnace caused that many fires. A mink coat Mrs. B valued at $5,000 was among the clothing burned. (thanks IRVING JOHNSON). . . . This'un comes from JOHN WEISBERGER and is about Lester Hudson of Hartville, Mo. Hudson stood in the crowd that watched a filling station burn to the ground. Then he went to answer a telephone call. "Your house has just burned down!" he was told. . . . While on its way to extinguish a fire in an automobile, Camden, N. J., Engine 1's rig struck two automobiles, but reached its destination and nobody was hurt. . . . Fire of undetermined origin, on a February some time back, swept the Windermere Methodist Church, Euclid and Holyoke avenues, Cleveland, causing estimated damage of $200,000, exactly one year after the congregation ceremoniously burned the church mortgage (thanks A. Hardy). . . . The place shall remain anonymous, but BABBY BABCOCK, demon Contrib', voices for this item. A small town was having a dance in the fire house, so the engineer of the pumper parked the rig in a nearby barn, then went hunting without telling anybody where said truck was parked. Came the fire. All hands hunted but couldn't locate the apparatus until the engineer returned from trip and informed 'em. . . . All in a fog were good folks of Athol, Mass., one December day. The fire department, at the earnest cries of a householder that something was burning and throwing up clouds of smoke, roared down to South Athol They found a fog bank rolling in. (thanks J. W. C.) . . . KAY MOSES, Fire Engineman, Engine 13, Baltimore Fire Department, says this actually happened in his city. One of the ladder companies, it seems, was sent out on one of those "cat-in-a-tree" jobs. The Lieutenant sized it up and decided that a 22-foot ladder would do the work. He turned to a rookie and said "go back to the truck and get the twenty-two." "Gosh, Lieutenant," said the "Boot," "are you gonna shoot him?" . . . Something new in fire rescue technique is reported by clipper RAYMOND G. LEE. Steelworker Blackie Mihalek was hanging from a second story ledge with flames licking around him. Then crane operator J. D. Grundon, on the same remodeling project, went into action. He yanked levers and the big steel hook swung out to Mihalek, who grabbed the cable, got on the hook and was lowered to the ground with no hurts worse than minor hand burns.

YOU CAN'T PUT OUT FIRES WITH GUESSWORK!
2
IVFDI
NATIONAL FOAM IS
FIRE TESTED
FOAM
When a flammable liquid fire strikes, you need instant, complete fire-smothering foam—not guesses! That's why National Foam System actually fire-tests every batch of foam it produces . . . proves its fire-fighting ability in the field, for split-second efficiency in your plant.
You know, before you buy it, that National's fire-tested foam will never let you down. National Foam System—and only National—designs, produces, fire-tests and delivers its own foam . . . controls every step of its manufacture. You get proved performance for your fire protection system, greater security for your plant.
For dependable, quick-acting, fire-blanketing foam, insist on National's complete line of fire-tested foam and foam devices. For free booklet, "What is Foam and How To Use It," write to Dept. F.
Gasoline ignited in test tank
Small tower discharges Aer-O-Foam
Fire out in less than two minutes
NATIONAL
FOAM SYSTEM INCORPORATED
WEST CHESTER, PENNA.
Headquarters for Foam Fire Protection
NATIONAL FOAM SYSTEM
CONTINUED FIRE PROTECTION

Fire Service Rescue

(*Continued from page* 118)

is to check for stoppage of breathing. If the victim is not breathing, artificial respiration must be started immediately whether it is a ground, underground or above ground rescue, or a pole top or tree top rescue.

For the initial action it is probable that manual artificial respiration will be applied first. The massaging action of the hand manipulation should tend to loosen rigid muscles. The manual type should be continued until a resuscitator can be prepared. Utility companies sometimes prefer that in accidents to linemen their own trained men give manual artificial respiration rather than have someone else use a resuscitator. They have studied this subject over a long period of time, their men are well trained, and they have revived and saved many of their own victims. If that is what they want, it is good practice to let them have their way. They contend that the manual operation stimulates the heart better than a mechanical device. This has yet to be proven, but we must remember that they have saved more men from death due to electric shock than has the Fire Service. They always welcome the administration of oxygen in conjunction with manual artificial respiration. Rescue personnel should stand by to aid and assist them in any manner they can. In all cases of asphyxiation due to electric shock, other than to utility company personnel, rescue personnel are advised to resort to the resuscitator as soon as is practical.

Artificial respiration should be continued at least ten minutes or until the victim breathes of his own accord before lowering or raising him to ground or floor level. Always assume that the shock to the heart has been severe and that there is a possibility of ventricular fibrillation. Try to keep the victim quiet and inactive. Do not attempt to restrain him physically as this will add to the burden of the heart; but rather, try to quiet him by comforting him.

Victims of electric shock are often fighting and active when they become conscious. If it is a pole top rescue, have another rescuer remove the victim's spurs while you are giving artificial respiration to prevent damage to the rescuers. If the rescue is on a scaffold use a safety belt and tie yourself on so you will not be thrown off when he comes to. Always check for burns. Cut away the clothing to give first aid for burns. Remember that there may be hidden burns that you cannot see or treat. Always treat for shock. Every victime of serious electric shock must have immediate medical care.

Gas Hazards

The gas hazard exists in every fire and in every gas leak, and may exist in most confined, unventilated spaces. It may exist in any tank rescue, cave-in or excavation rescue, or when extinguishing fire in a confined place with certain chemical extinguishers.

The danger may be from poisoning, asphyxiation, attack on the body or explosion. Gases may be heavier than air or they may be lighter than air. They may be easily diffused and dispersed or they may be the persistent type that is hard to dispel. They may be toxic, explosive or they may be considered harmless. They may be the cause of response as victims collapse in cesspools, tank cars or refrigeration plants, or merely to ventilate or diffuse a contaminated enclosure; or they may be incidental to an emergency as the product of a fire or because accidentally released from pipelines, tanks or other containers through leak, break or rupture.

Any gas, whether it is the toxic, explosive or harmless type, that dilutes the oxygen content of the air can be dangerous. Knowing this, it is not necessary that rescue personnel should understand gases as does a chemist. Mention of a few will give use an idea of the necessity of taking precautions.

Carbon Dioxide (CO_2): Specific Gravity 1.529; non-flammable, non-poisonous, colorless, odorless; will not support combustion or life; a product of combustion and given off in breathing; by diluting oxygen content of air, it results in suffocation.

Carbon Monoxide (CO): Specific Gravity 0.967; flammable, poisonous, colorless, odorless, tasteless, product of incomplete combustion where there is not sufficient oxygen; air containing 12% to 75% is explosive; presence of 0.01% may produce poisoning symptoms.

Ammonia (NH_3): Specific gravity 0.597; flammable, poisonous, colorless, penetrating odor, sharp taste; air containing 15% to 26% is explosive; causes spasms of the throat and is irritating to the respiratory system; attacks the skin and, in liquid form, causes burns.

Hydrogen Cyanide (HCN): Specific gravity 0.697; flammable, very poisonous, poison may be absorbed through the skin; tasteless and has odor similar

CD SIRENS·FOR DEFENSE

twin sentinels of safety

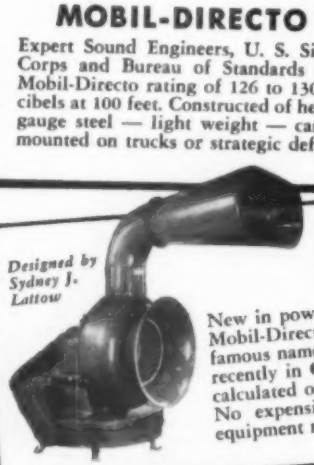
FCDA approved for matching funds.

MOBIL-DIRECTO
Rotating Directional
AIR RAID SIRENS

Your life depends on Mobil-Directo Air Raid Sirens — the most effective sirens on the market for area covered. "Remember, the large casualties in Japan from the Atom Bomb resulted from failure to provide adequate air raid warning" — U. S. Army. Mobil-Directo Sirens are used by Armed Forces and in numerous municipalities.

MOBIL-DIRECTO Gasoline-Driven Siren

Expert Sound Engineers, U. S. Signal Corps and Bureau of Standards give Mobil-Directo rating of 126 to 130 decibels at 100 feet. Constructed of heavy-gauge steel — light weight — can be mounted on trucks or strategic defense buildings easily and quickly. Consistent operation guaranteed in the event of power failures, sabotage, and under blackout conditions. Remote control wiring optional.



Designed by Sydney J. Lattow

MOBIL-DIRECTO
Electric Air Raid Siren

New in power only, you can't buy a louder siren than the Mobil-Directo — for horsepower used — only one 10-HP famous name motor! Outperformed all other sirens, tested recently in Chicago, in decibel rating and audibility when calculated on a weight, cost and ease of installation basis. No expensive accessories or costly standby generating equipment necessary.

Manufactured by the World's Largest Maker of Rotating Directional Sirens!

BIERSACH & NIEDERMEYER CO.

1931 N. HUBBARD STREET *Founded 1872* MILWAUKEE 12, WISCONSIN

to that of bitter almonds; air containing 5% to 40% is explosive; used in fumigation.

Methyl Chloride (CH_3Cl): Specific gravity 0.920; flammable and poisonous; colorless, tasteless has sweetish odor; air containing 8% to 19% is explosive; used as a refrigerant.

Acetylene (C_2H_2): Specific gravity 0.906; flammable; non-poisonous, colorless, tasteless, disagreeable odor; 2½% to 80% in air is explosive; used for welding, cutting and lighting.

Sulphur Dioxide (SO_2): Specific gravity 2.264; non-flammable, poisonous, colorless, tasteless, irritating sulphurous odor; very irritating to eyes and throat; used as a bleaching agent, in fumigation and as a refrigerant.

It can be seen by checking the above that rescue personnel must be particularly cautious in gaseous areas. The old theory that "the good air is close to the floor" does not always hold true. Some poisonous gases, heavier than air, may settle and accumulate in depressions. Any gas will dilute oxygen content. Care must be exercised in using a cutting torch or unprotected light; there may be a potential explosive hazard. Some gases will attack the body and render breathing apparatus useless.

If he did not know the facts, the rescuer, wearing breathing apparatus, might unwittingly leave a victim, wearing none, in a seemingly safe depression, so that he might continue rescue operations; or, he might lay the victim in such a depression to administer first aid; Or he might remove his own mask "for a breath of air." The action could prove fatal.

When victims are observed unconscious at the bottom of a cesspool or in a tank car or similar circumstances, without any other apparent physical damage, don't attempt a rescue without donning breathing apparatus. In too many cases both rescuer and victim have had to be rescued.

When there is suspicion of a gas that might attack the body as well as the respiratory system, as in the rescue of persons from refrigeration plants, take additional precautions. Grease under the armpits, at genitals and other places, where the skin is tender and sweating occurs, with petrolatum. Tighten the clothing at ankles and wrists with heavy rubber bands. Tie a hand line or life line around your body and trail it in with you so someone can drag you out in an emergency. There are two gas detecting devices on the market that may have their importance to the Rescue Squad. One, with a color meter, indicates the presence of a concentration of carbon monoxide gas. The other, with a needle meter, energized by flashlight batteries, indicates an explosive range of flammable gases. In industrial areas, for the safety of both Rescue and Fire personnel, these instruments could well be provided to rescue apparatus.

Refrigeration

There are several refrigerants that are commonly used in refrigeration plants. They range from Freon, comparatively harmless, to sulphur dioxide, which runs high in toxicity. The prevailing refrigerants are Freon and ammonia, with the exception of the oil industry (refineries, etc.) which uses mostly propane (an anaesthetic). Freon is usually used in small plants (markets, etc.) while am-

EVENLY MATCHED...

for purpose and quality

BADGE and CROWN, both are prized possessions, yet standards of value are measured in different ways. To the king his crown is a possession of untold value and historical significance. To you, your badge is without question a prized possession that reflects personal achievement for you. Your badge has a special meaning to you — it stands for honesty, authority, and devotion to duty.

If your badge is a BLACKINTON BADGE you realize true quality and you know that your badge is the finest. But if you are one of the few not wearing a BLACKINTON BADGE you've missed a lot in personal satisfaction. Ask to see BLACKINTON BADGES the next time your equipment supplier calls. He will gladly show you the true quality and outstanding appearance of BLACKINTON BADGES.

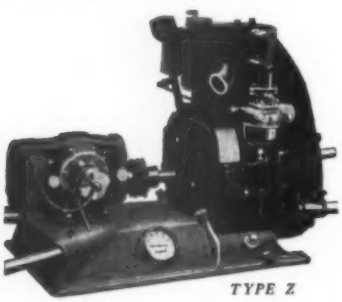
BLACKINTON BADGES sparkle with quality.

BLACKINTON
V. H. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.

Blackinton Police and Fire Badges are sold throughout the United States and Canada, exclusively through authorized equipment suppliers.

"Almost 30 Years Old and Still Going Strong!"

That's what owners report today about some of earliest models of Pacific Pumpers ever built.



TYPE Z

WHEN THE FIRST Pacific Pumper was introduced, it was a startling innovation. To produce an efficient pump light enough to carry by hand into rugged terrain but powerful enough to deliver an effective flow of water to combat forest blazes was news of national importance. Today, after nearly 30 years, many of the earliest Pacific Pumpers are still in use and are still the favorite of experienced fire fighters . . . mute testimony to the stamina and dependability built into all Pacific Pumpers . . . and to Pacific Pumper's policy of supplying parts for even the earliest models.

TYPE Y

Years of engineering research and thousands of practical field tests made possible the improvements incorporated in the famous Type Y Pacific Pumper . . . the most powerful unit ever built for its weight and size. The Type Y Pacific Pumper quickly won the approval of experienced fire fighters and fire fighting authorities . . . and is still the standby of many of the nation's most practical forest fire fighters. Newer, postwar models of Pacific Pumper are now available . . . all even lighter, more compact and durable, and more versatile for a variety of purposes.

Write for data on the complete line of Pacific Pumpers, hose and accessories

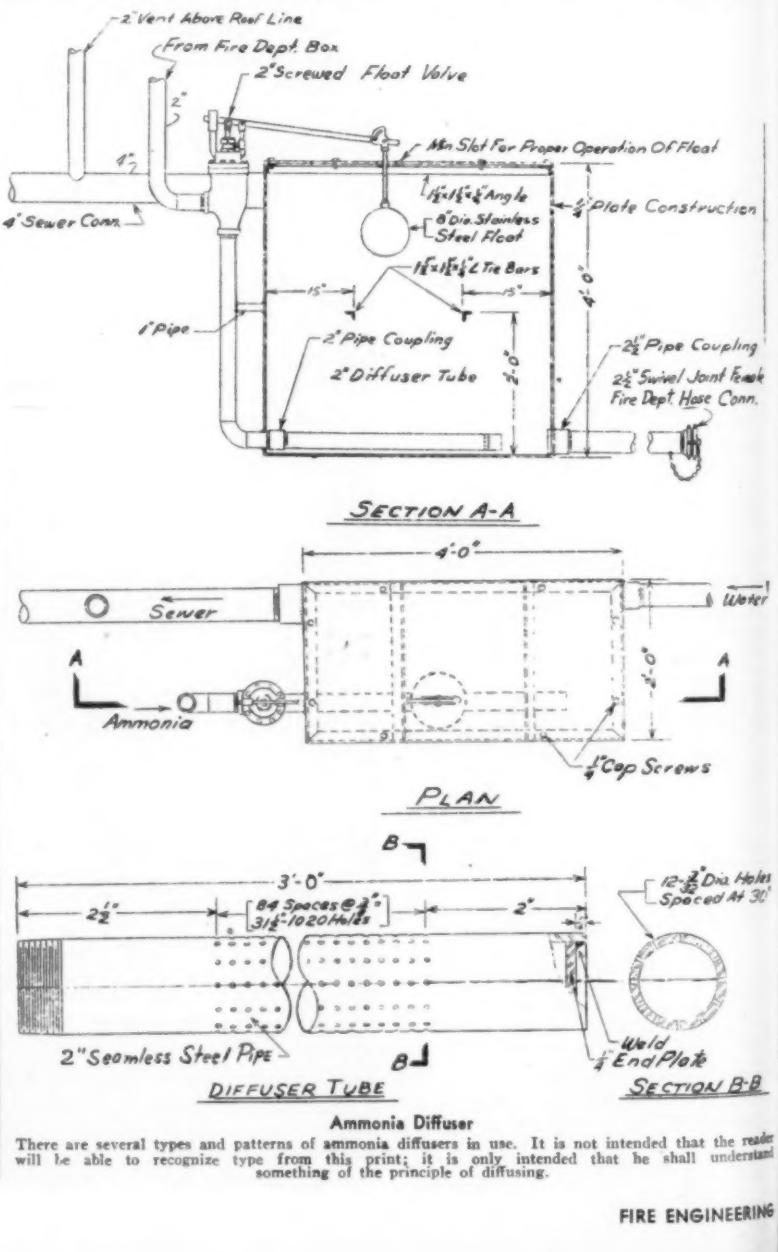
PACIFIC *Marine Supply Co.*
FIRE EQUIPMENT DIVISION
SEATTLE 1, WASHINGTON

monia is usually used in larger plants. In many cases of fire in wholesale grocery warehouses, ice plants, etc., the refrigeration system is ruptured through heat, collapse or excessive pressures. In the larger of these, ammonia fumes can be expected.

Ammonia is a strong, irritant chemical and can do great bodily harm in either its anhydrous liquid or gaseous form if improperly handled and may cause irreparable damage or death. It attacks the body as well as the respiratory system. When entering ammonia impregnated areas or areas where there is a possibility of rupture of lines, rescue personnel, even though protected with breathing apparatus and other means, should note well the means of escape.

Anhydrous liquid ammonia produces severe burns on contact with the skin, due not only to its caustic action but also to the freezing effect produced by rapid evaporation. The action is as destructive as fire burns, disintegrating skin and flesh. In gaseous form it attacks the respiratory system causing burning of the throat, coughing, difficult breathing and, in severe cases, a reflex laryngeal spasm prohibiting breathing. It also attacks the eyes and tender skin. Even though rescued and revived, an after effect may be pulmonary congestion (pulmonary edema) and ultimate death from suffocation (asphyxia), due primarily to the congestion of all tissues of the respiratory tract. In concentrations of 0.6 to 1 per cent, ammonia is lethal within a few minutes, and a concentration of 0.2 per cent may be fatal after a short exposure. Warning signs will be given at much lower concentrations by irritation to the skin, eyes, and respiratory system.

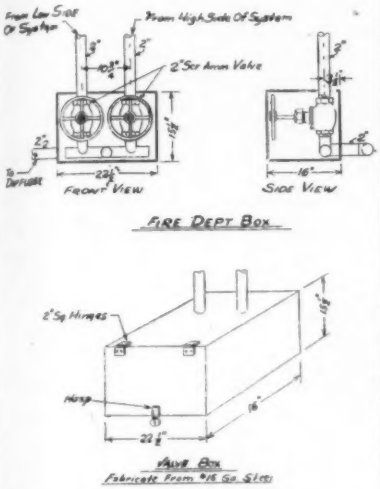
While standing by at the scene of an ammonia leak, rescue personnel should be careful not to expose any breathing apparatus or resuscitator to drifting vapors. Even slight concentrations can render face pieces so obnoxious to



Ammonia Diffuser

There are several types and patterns of ammonia diffusers in use. It is not intended that the reader will be able to recognize type from this print; it is only intended that he shall understand something of the principle of diffusing.

breathing that their use would be almost impossible when needed. If the pump and hose type of breathing apparatus is used in performing a rescue, care must be taken that the pump is operated in uncontaminated air; slight drifting vapors pumped to the rescuer can render him useless.



There is no value in giving manual artificial respiration to a victim while he is still in the contaminated area. When a larnygeal spasm has caused stoppage of breathing, the later types of resuscitator can usually get oxygen past the obstruction by slowing the machine way down. Use the airway immediately to assist in getting oxygen into the lungs.

During resuscitation all possible speed should be used in removing contact of ammonia from the person. Copious amounts of water should be used to wash off the victim immediately. This also applies to the eyes if they have been affected. When thorough washing has been completed, treat as a burn. Keep the victim warm with sheeting and blankets. *Under no conditions* apply any salves or ointments.

Rescue personnel should acquaint themselves with diffusing systems in the area they serve. When diffusing is necessary to relieve pressure, it should always be done at the exterior of the building, never in the interior, except by refrigeration engineers. If the diffuser is the flush type be sure a charged line is hooked up before operating. If it is the small emergency type that diffuses to the air open the valves slowly so that vapor only will be diffused rather than liquid that might spray and burn the operator.

Truckers "See Red"?

Truckers, according to data published in "Automobile Facts", apparently believe that motorists "see red". At least if we are to judge by an analysis conducted by one motor vehicle company, red is the most popular color for trucks and we don't mean fire trucks alone.

The company reported that nearly 30 per cent of the units coming off its assembly lines are painted the fiery hue.

"The use of bright colors is viewed as a highway safety factor" the company reported.

THIS IS ALL YOU NEED TO MAKE 5,000 GALLONS OF AIR FOAM and it costs less than 5 lengths of hose!

Now—without sacrificing hose space—you can carry adequate air foam equipment. *All you need* is one Pyrene* No. 3 Forcing Type Foam Maker and four 5 gallon cans of compound. Only Pyrene makes it possible to produce air foam in volume with such minimum equipment. And with Pyrene it's easy to get into action fast. All you have to do is couple the foam maker into the hose and insert the pick-up tube into the can of foam compound—it starts making foam immediately.

Plan right now to equip *at least one* of your units with Pyrene. Due to increased oil and gas deliveries, more and more flammable liquid fires are occurring every day. Write for name of the Pyrene jobber nearest you.

*T.M. Reg. U.S. Pat. Off.

Pyrene AIR FOAM

PYRENE MANUFACTURING COMPANY

594 Belmont Avenue **Newark 8, New Jersey**

Affiliated with C-O-Two Fire Equipment Co.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of January, 1953.

Month Ending January 31, 1953

Montgomery, Ala.—Bldg. occupied by S. P. Knighten Furniture Co. and Belmont Cafe destroyed.

Russellville, Ala.—Franklin County courthouse destroyed.

Phoenix, Ariz.—Main bldg. & whse. at City's South Mountain jail annex destroyed. Overheated space heater.

Williams, Ariz.—Forest Service whse. at Camp Clover, three miles west, destroyed.

Walnut Ridge, Ark.—Red & White Grocery and Haynes Studio destroyed. Dental offices of Dr. H. M. Chambers, storeroom of Sloan's Dept. Store and law office of Blackford damaged.

Fresno, Cal.—Kerman Tallow Works damaged.

Los Angeles, Cal.—Flintkote Co. plt. destroyed.

Malibu Beach, Cal.—Three duplexes on Big Rock Beach destroyed.

Santa Cruz, Cal.—Whse. and office of H. H. Ledyard Co., a wholesale grocery firm, destroyed. Arson suspected.

Santa Rosa, Cal.—Saddle & Sirloin restaurant, small shops, Montgomery Village District, destroyed.

Watsonville, Cal.—Baker Food Products bldg. and adj. United Grocers bldg. destroyed.

Avondale, Colo.—Avondale Lumber Co., Rodriguez grocery, gas station, duplex and dwelling, damaged.

Casper, Colo.—Bend's school, 95 miles southwest, destroyed.

Kim, Colo.—Drug store operated by William Marvin, grocery operated by Jerry Moore, and garage operated by Joe Dabney in Las Animas County destroyed.

Pueblo, Colo.—Colorado Supply store near Colorado Fuel & Iron Corp. destroyed.

Milford, Conn.—South View Hotel, Myrtle Beach, damaged.

Southington, Conn.—First Baptist Church damaged.

Wilton, Conn.—Georgian-Colonial Home at Old Belden Hill destroyed.

Eustis, Fla.—Feed mill of the former Lake County Canners, two miles north, destroyed.

Kissimmee, Fla.—Osceola Fruit Distributors canning plt. and new feed mill owned by Lester Ivey & Son destroyed.

Atlanta, Ga.—Big Apple Super Market in Twin Oaks shopping center destroyed.

Atlanta, Ga.—Mt. Pleasant Baptist Church destroyed.

Dawsonville, Ga.—Bldg. housing feed mill and electrical appliance and repair shop destroyed.

Hinesville, Ga.—High school bldg. of Bradwell Institute destroyed.

Mowcow, Ida.—Larson Buick Co. destroyed.

Canton, Ill.—Canton Sash & Door Co. plt. destroyed.

Chicago, Ill.—Bldg. occupied by Andes Candy store, Citizens Loan Co. office and doctors' offices destroyed.

Harrisburg, Ill.—First Presbyterian Church of Harrisburg destroyed.

Metropolis, Ill.—Laundry & Wholesale Grocery Co. destroyed.

Mt. Vernon, Ill.—Bldg. housing Midwest Dealers Supply Co., Smith Implement Co. and whse. of Tire Mart destroyed.

Ottawa, Ill.—Sandbagging room at Standard Silica Corp. plt. destroyed.

Princeville, Ill.—Bldg. of Princeville Stone Co. damaged. Gasoline used for cleaning engine parts overturned.

Elkhart, Ind.—Pickrell Bldg. occupied by Elkhart Business University and Goldberg's Men's Wear Store in downtown damaged.

Indianapolis, Ind.—Whse. on south side of Indianapolis business district, owned by Goldstein Bros. household furnishings dealer, destroyed.

Merkel, Ind.—Main bldg. of Naas Canning Corp. destroyed. Heating unit.

Muncie, Ind.—Concrete block banana ripening whse. owned by Commodity Sales damaged. Explosion.

Peru, Ind.—Mississinewa Country Club, two miles northeast, destroyed. Defective wiring.

Des Moines, Ia.—Combined home and store bldg., owned by Alex Grossnickle, four miles east, destroyed.

Fort Madison, Ia.—Auditorium, chapel and two prison shops at Iowa State Penitentiary destroyed. Fire set by a convict.

LaPorte, Ia.—Bldg. housing Hotel LaPorte and five offices and business establishments destroyed.

West Des Moines, Ia.—Sawmill of Des Moines Lumber Co. destroyed. Defective wiring.

Kansas City, Kans.—Bldg. occupied by Lumbermen's Supply Co., Inc., destroyed.

Camp Taylor, Ky.—Fifer's Industries damaged. Oil heater.

Paducah, Ky.—Paducah Dry Goods Co. and adj. Gladys Shop destroyed.

Shreveport, La.—A. B. Wynn Commission House damaged.

Augusta, Me.—City Motor Co., Augusta-Gardiner Highway, damaged.

Biddeford, Me.—Mercantile bldg. of George Gendron, surplus store of Albert Beaudoin and Club Cafe of Armand Piorier, damaged.

Lewiston, Me.—Bldg. occupied by P. L. Pottle and A. P. Fournier clothing store, Atherton Furniture Co. and Star Millinery & Cloak Co. damaged.

Sanford, Me.—Garage of Henry L. Goodloe damaged. Paint spray explosion.

York Beach, Me.—Edgemere Hotel destroyed.

Princess Anne, Md.—Restaurant operated by Melvin Ward, U. S. Route 13, six miles south, destroyed. Short circuit.

Charlestown, Mass.—Malden Mop & Brush Co. damaged.

Nantasket Beach, Mass.—Amusement block and three nearby dwellings destroyed.

Peabody, Mass.—Spence Auto Body Shop destroyed.

Alpena, Mich.—Roy A. Lee farm equip. whse. on U. S. 23 destroyed.

Belleville, Mich.—Belleville Consolidated School, Wayne County, destroyed. Defective ventilating fan.

Cheboygan, Mich.—Masonic Temple, drug store, Jewelry & Loan Co., Bar & Appliance store destroyed.

Roseville, Mich.—World Furniture Co. destroyed. Oil furnace.

Deer River, Minn.—Coast to Coast store and three other firms destroyed. Sparks from acetylene torch.

Minneapolis, Minn.—White House Cafe destroyed.

Richfield, Minn.—Minneapolis-National Tea Co. store destroyed. Overheated motor.

Rochester, Minn.—Rommel Hotel destroyed; Rochester Dry Cleaners, South Crystal Cafe, Massif Carpet Co. and Deluxe liquor store damaged.

Virginia, Minn.—Ormonde Hotel damaged.

Moorhead, Miss.—First Methodist Church damaged.

Drexel, Mo.—Machine shop, four miles northeast, Miami County, destroyed.

SENSIBLE
FOR ALL YOUR HOSE CONNECTIONS

improved

SENSIBLE LUG COUPLINGS

(ROCKER LUG TYPE)

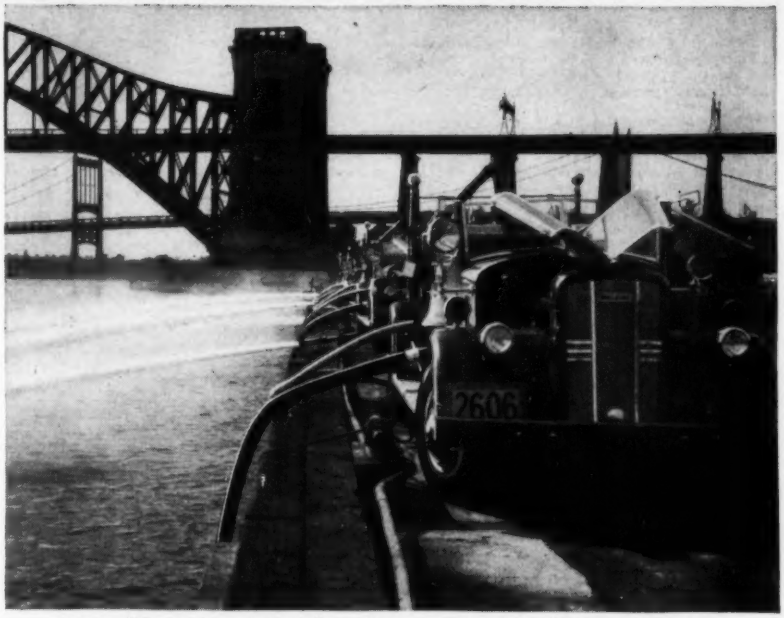
meets

GOVERNMENT SPECIFICATIONS

After 60 years experience in the fire-fighting equipment field, Powhatan takes justifiable pride in the Improved Sensible Lug Coupling. Our full 60 years of know-how are represented in this modern and dependable piece of equipment. . . . Specify "Sensible."

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town West Virginia
Established 1892

Kansas City, Mo.—Henry C. Kumpf School damaged.
Kansas City, Mo.—Acme Floor Covering Co. and adj. vacant bldg. damaged.
Kansas City, Mo.—Chili Bowl, Society Sewing Center, Security Safe Service, Inc.; Frank L. Stevens, insurance agency; and Uptown Buffet, destroyed.
Coram, Mont.—North Fork Lumber Co. destroyed.
Lethbridge, Mont.—First Baptist Church destroyed.
Reno, Nev.—Granada Theatre destroyed. Cigarette.
Asbury Park, N. J.—Bldg owned by Trad Television Co. destroyed.
Clifton, N. J.—Three-story apt. bldg. and store, the latter occupied by E. Kover Hardware Co., damaged.
Cross Keys, N. J.—Broadmen Mfg. Co. factory damaged.
Denville, N. J.—Wayside Inn, intersection of Route 46 and 53, destroyed.
Flanders, N. J.—Flanders Hotel destroyed.
Little Ferry, N. J.—Campo Auto Sales lot in Route 46 at Liberty street, damaged. Kerosene stove.
Maplewood, N. J.—Industrial Brass Foundry Co. damaged.
Perth Amboy, N. J.—Jensen's Supply Co., a clothing store, damaged. Gas stove explosion.
South Somerville, N. J.—Crane farmhouse on Falcon road, destroyed. Faulty fireplace.
West Milford, N. J.—Brown's Hotel on lower Greenwood Lake, used as a training center for boxers, destroyed.
Binghamton, N. Y.—AMP Grill & West Side Market destroyed. Cigarette.
Great Neck, L. I., N. Y.—Baim Appliance Co. destroyed.
Little Falls, N. Y.—Bldg. housing Carter Funeral Home, vacant dwelling owned by William Austin and other dwellings, destroyed. Explosion.
Oswego, N. Y.—Bowling alley & bar in Fortnightly Club destroyed.
Setauket, L. I., N. Y.—Clubhouse of St. George's Golf & Country Club, destroyed.
Syracuse, N. Y.—Dairylea Milk & Ice Cream plt. damaged.
Valley Stream, L. I., N. Y.—Sunrise Food Exchange market-whse., destroyed.
Franklinville, N. C.—Public school of Randolph County destroyed.
Hendersonville, N. C.—Rogers Hosiery Mill plt., U. S. Highway 64, damaged. Furnace.
Norlina, N. C.—Community Motor Service destroyed. Acetylene torch.
Scotland Neck, N. C.—Lewiston-Pierce Lumber Co. planing mill destroyed.
Akron, Ohio—Iacomini's Restaurant destroyed.
East Liverpool, Ohio—Evans Pontiac Sales Co. garage damaged. Defective gas heater.
Toledo, Ohio—Toledo Recreation Bowling Alleys damaged.
Warren, Ohio—Picking house at Pittsburgh Steel Co.'s Thomas strip div., destroyed.
Zanesville, Ohio—Main planing mill and newly completed bldg. at Finlaw Lumber Co., damaged.
Tecumseh, Okla.—Sanders Laboratories, Inc., damaged.
Camp Grisdale, Ore.—Garage of Simpson Logging Co. destroyed. Faulty furnace.
Klamath Falls, Ore.—John D. O'Connor Sons feed equip. bldg. destroyed.
Salem, Ore.—Hillcrest Girls School damaged. Arson.
Lampeter, Pa.—Electrical appliance store of Ross D. Witmer, destroyed.
Lancaster, Pa.—Armstrong Corp. Co. destroyed. Accumulation of fumes in stove.
Ligonier, Pa.—Fort Palmer Presbyterian Church destroyed.
London Grove, Pa.—Barn on property of Roland E. Sharpless damaged.
Philadelphia, Pa.—Connelly Container Corp. plt. destroyed.
Philadelphia, Pa.—Storeroom of Best Markets damaged.
Uniontown, Pa.—Bldgs occupied by Rofey Home Furniture Co. and Sumey Tinning Co. in Fayette County, damaged.
Wilkes-Barre, Pa.—Bldg. of Empire Furniture Co. destroyed.
Pawtucket, R. I.—Church of the Sacred Heart, one of the oldest and largest Catholic Churches in northeast Rhode Island, destroyed.
Providence, R. I.—Swift & Co. meat plt. damaged.
Quonset Point, R. I.—Recreation Center Quonset Point Naval Air Station, destroyed.
Aiken, S. C.—Jones Electrical Co. store, McCreary Department Store and drug store, destroyed. Explosion.
Aiken, S. C.—Whse. used by food caterer destroyed.
Yale, S. D.—Elevator owned by Riebe & Riebe Grain Co., destroyed. Oil heating stove.
Molensville, Tenn.—Waller Funeral Home, combination dwelling and barber shop owned by Ed House and adj. vacant storehouse destroyed.
Atlanta, Tex.—Cass County Canning Co. whse. destroyed.
Brownwood, Tex.—Downtown Drug Store and



New York City testing a battery of new Waterous-equipped Ward LaFrance fire trucks.

WATEROUS PUMPS PROTECT WORLD'S LARGEST CITY

Protecting New York City's 320 square miles and $26,000,000,000 worth of property calls for the world's biggest fire department.

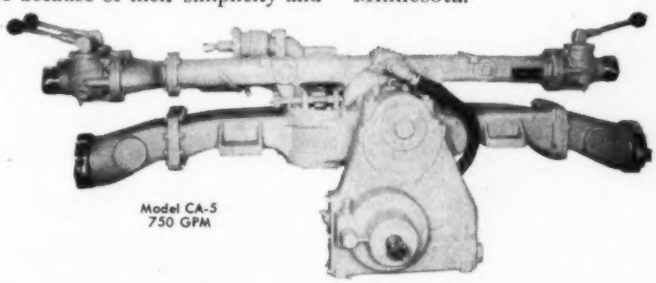
It is only natural that New York should select fire apparatus equipped with WATEROUS pumps. Eighty-nine new WATEROUS equipped fire trucks have been put into service in New York City during recent years, and on January 20, 1953, 49 more were on order.

New York is typical of thousands of cities, both large and small, that rely on dependable WATEROUS Fire Pumps.

Maintenance men prefer WATEROUS pumps because of their simplicity and accessibility. The pump body, for example, is arranged in two sections so that the entire impeller assembly may be lifted out without disturbing the setting of the pump on the chassis. Packing may be adjusted or replaced without disturbing rest of the pump. Hardened steel gears and protected ball bearings help keep wear to a minimum.

Operators prefer WATEROUS pumps because of their sure, quick priming, simple controls, freedom from vibration, and dependable performance.

For further information, write to WATEROUS Company, St. Paul 1, Minnesota.



Model CA-5
750 GPM

Waterous

DEPENDABLE PUMPS

SINCE 1886

80 EAST FILLMORE AVE. • ST. PAUL 1, MINN.

nearby ladies' clothing shop and men's haberdashery, destroyed.

Fort Worth, Tex.—Oil Mill Co. and apt. house, the latter a portion of West Side Shopping Center Apts., damaged.

Houston, Tex.—Petroleum products loading wharf at Hess Terminal Corp. on Ship Channel damaged.

Itasca, Tex.—Fred Morrison Cottage for Boys at Presbyterian Home and School destroyed. Faulty water heater.

Odessa, Tex.—Banner Creamery destroyed.

San Antonio, Tex. — Southern-Henke Ice & Storage Co. damaged.

Sheridan, Tex.—Shell Oil Co. recycling plt. damaged. Explosion.

Moroni, Utah—Moroni Feed Co. plt. & Mill, a mile south, destroyed.

Zion National Park, Utah—Government machine shop destroyed. Defective automatic oil furnace.

Alexandria, Va.—Alexandria City Armory destroyed. Cigarette.

Bedford, Va.—Popular Spring Elementary School near Cifax, Bedford County, destroyed.

Cobbs Creek, Va.—Mathews Chapel Methodist Church on State Route 198, destroyed. Defective chimney.

Farmville, Va.—Colonial Stores, Inc., damaged.

Longview, Wash.—Judds School Supplies, destroyed.

Shaw Island, Wash.—Darrell Fowler whse., gasoline station, destroyed.

Spokane, Wash.—Guthrie Planing Mill destroyed.

Vancouver, Wash.—Orchards apts. destroyed. Explosion.

Martinsburg, W. Va.—Shops and offices at Martinsburg Aircraft Service, Inc., destroyed.

Summersville, W. Va. — St. John's Catholic Church destroyed.

Milwaukee, Wis.—Badger By-Products Co., a firm which manufactures hog feed, damaged. Spontaneous ignition.

Oconomovoc, Wis.—Land O'Lakes Hotel, across the street from the City Hall, destroyed.

Oshkosh, Wis.—Whse. of Fuller-Goodman Lumber Co. and two boathouses and three boats of Affiliated Wisconsin Transfer Yards, destroyed.

Turner Valley, Alta.—Sixteen oil storage tanks and three bldgs. at Gas & Oil Refineries, Ltd. plt. near Hartell, 40 miles southwest of Calgary, destroyed.

Campbellford, Ont.—Free Methodist Church and implement whse. operated by Walter Jones, destroyed.

Crystal Beach, Ont.—Edgewater Hotel destroyed.

Hamilton, Ont.—Normal School owned by Ontario Board of Education destroyed.

Joliette, Que.—Towns's filtration plt. and Super Test Petroleum Corp., Ltd. refinery, damaged.

Thetford Mines, Que.—Spacious home of Rosarie Beaudoin St. Joseph de Beauce, lawyer, Megantic County, destroyed.

Cebu, Philippines—Residential section destroyed.

Petersburg, Alaska—Harbor Bar and Dependable Oil Co. destroyed. Coliseum Theatre damaged.

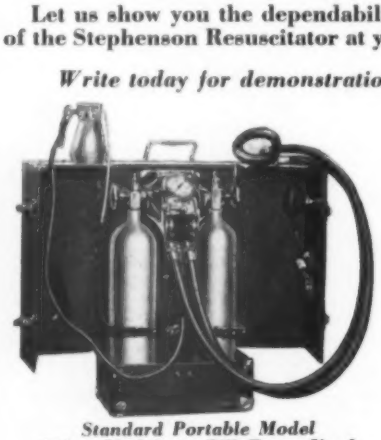
Chief, Protect Your Community Against Monoxide Poisoning!

During the winter months deaths from accidental carbon monoxide poisoning reach their highest point. Many of these deaths, as well as numerous other accidental deaths, can be prevented if you have a Stephenson Resuscitator.

To give your community maximum protection from accidents you need: 1. The latest and most successful resuscitation equipment (The Stephenson). 2. Well trained personnel.

Let us show you the dependability, simplicity and effectiveness of the Stephenson Resuscitator at your next meeting.

Write today for demonstration. No cost or obligation.



Standard Portable Model
Other Models to Fill Every Need

Save Lives,
Protect Your Community,
Increase Your Department's Reputation and Prestige,
With the New, Improved

STEPHENSON RESUSCITATOR

STEPHENSON CORPORATION
RED BANK NEW JERSEY

Represented in Canada by SAFETY SUPPLY COMPANY, Toronto

World Wide Fire News

By Rai B. Woolley

Peron Accuses Foes of Ravaging Fires

A rash of fires in Buenos Aires Province in January, which ravaged a big portion of the bumper wheat crop on which Argentina is depending for economic salvation, was blamed as political sabotage by the Government of Juan D. Peron, Dictator.

At least 100 major fires between Christmas and Jan. 10 killed seven persons, sent 28 to hospitals, destroyed 240,000 acres of crops and 1,800 head of cattle. Although some rye, oats and alfalfa have ben burned, wheat damage is reported most serious. Some 4 million bushels already have been destroyed. Estimates of the damage run more than 11 million pesos ($797,500).

On January 10 fire, started by burning oil-soaked rags, consumed more than one million gallons of crude oil and gasoline. Twenty firemen were injured in the blaze, which swept a Peron-Government-owned oil tank farm.

The fire started on the night of the 9th, and climaxed the crop and grazing land blazes that were reportedly set by arsonists who seek to sabotage Argentine's agricultural production.

The oil farm fire was fought by more than 3,800 firemen, with equipment from as far away as Buenos Aires. A small boy died in one of the fires reportedly of incendiary origin on the 9th.

On the night of the 8th, 15 persons burned to death in Buenos Aires when a city bus caught fire after its gasoline tank exploded. Four other passengers suffered serious burns and two escaped unhurt. The accident was a smaller duplication of the Chicago street car holocaust.

* * *

Jap Factory Blast Kills 12, Injures 212

Explosion of a huge hydrogen tank at a Nagoya chemical plant on Dec. 22 killed at least 12 persons and injured 212 others. Seven were reported missing after the explosion, which spread damage over a wide area of the Japanese city. Thirty-six of the injured were reported in critical condition. Besides the 212 who were hospitalized, 300 other persons received minor injuries as a result of the blast which shattered the Toa Synthetic Products Company steel and concrete plant and wrecked and damaged many buildings and houses.

American Army disaster teams were sent to the scene of the disaster to assist in rescue work.

Damage to the plant, which manufactured ammonium sulfate, was estimated at $3 million.

* * *

Bit of a Fog Y'Know—Blinds Fire Brigade

A pea-soup-plus fog which lasted more than 48 hours in London early in December disrupted all traffic except the subways, and gave emergency services much trouble.

Emergency crews were called in by

radio to man all ambulances available in the city for accidents. Housebreakers and street robbers were active. Many householders went without milk when suppliers refused to make their rounds. Most buses abandoned their runs and the few which operated drove by "dead reckoning" as did the ambulance crews and firemen.

An extra man was assigned to each ambulance to walk ahead as a guide. A walking escort of firemen likewise paced fire "appliances" responding to fires, one a burning furniture factory which the Brigade had difficulty in locating.

* * *

Hot Off the News Ticker

A four-hour fire which struck Laoag, in northern Luzon, on December 22 reportedly caused $1,500,000 damage and left 2,000 homeless. . . . On January 6 fire destroyed a large residential section of Cebu, port city of 180,000 in the central Philippines, making 10,000 persons homeless and resulting in damage of another $1,500,000. One child was reported missing. . . . Moving men and fire fighters in that order, paid calls January 12 at the home of James C. Hagerty, press secretary of president-elect Eisenhower. The van came to take the Hagerty's furniture to their new home in Washington. Movers found an overheated hot water heater and called firemen. Damage was negligible. . . . A tank of hot oil blew up at the Shell Oil Company's Sheridan, Tex., plant January 7, killing four men, injuring three others and destroying almost half of the $10 million project. The plant separates propane and butane from crude petroleum. The remaining compounds after these two are removed were what blew up in the tank. . . . A British military plane ferrying thirteen American pilots from Malta to Germany caught fire and was abandoned on December 23. After all fourteen on board parachuted safely to earth, the unpiloted plane plunged into a home and injured three French girls asleep in one room. . . . In Rangoon, Burma, about 500 United States-made movie prints destined for the Burmese market were destroyed December 6 by a fire of unknown origin. . . . In Cahelhall, Scotland, four sisters ranging in age from five to eighteen were trapped by fire in their bedroom and burned to death early on December 16. They were daughters of Mr. and Mrs. William McCrone, who fled to safety with their other seven children. . . . The Jerusalem office and Youth Club of the Israeli Communist party were set afire by unknown persons on December 1, causing substantial damage. . . . Seven of the 16 children of Mr. and Mrs. Augustine Lessard were burned to death in their farm home at St. Luc, some 50 miles from Quebec City. Mrs. Lessard, who suffered severe burns in aiding some of her surviving nine children to escape, was reported near death. . . . The schooner City of New York, last of Canada's big wind jammers and the old vessel used by Rear Admiral Richard E. Byrd on his Antarctic explorations, was called a total loss as she burned on a reef off Yarmouth, N. S., December 31. The famous old ship grounded after snapping her tow line, and took fire, which ate gradually through her 34-inch topsides and 40-inch bottom planking. . . . Firemen wearing gas masks battled a blaze for 45 minutes December 3 aboard the giant

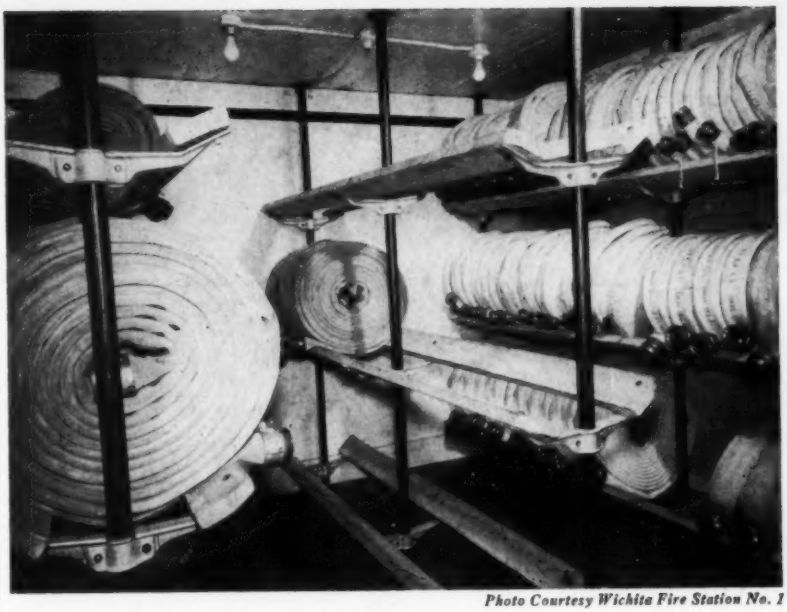
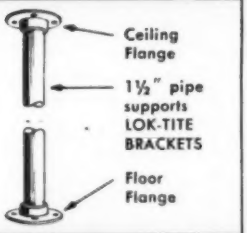


Photo Courtesy Wichita Fire Station No. 1

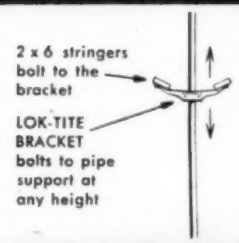
The Solution to Hose Storage Problems

FEATURES

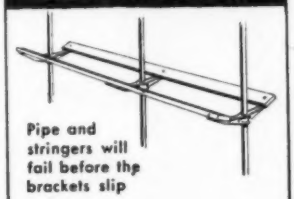
SIMPLE INSTALLATION



EASY ADJUSTMENT



BIG LOAD SUPPORT



Pipe and stringers will fail before the brackets slip

Build Your Own Racks With Lok-Tite Brackets

MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

$3.65 F.O.B. Wichita

W-B MANUFACTURING COMPANY
157 NORTH WACO STREET **WICHITA, KANSAS**

For booster and high pressure fog lines

There are four good reasons why the fire fighters specify BAR-WAY couplings. Four reasons why BAR-WAY couplings are growing in favour with firemen, hydraulic engineers and others who insist on the best.

- **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.
- **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
- **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
- **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL

Send for our free pamphlet. Gives detailed specifications for all types of pressure hose.

BAR-WAY MFG. CO., STAMFORD, CONN.

WEST COAST REPRESENTATIVE } W. D. RIGDON, 383 Brannan Street, San Francisco 7, Calif.

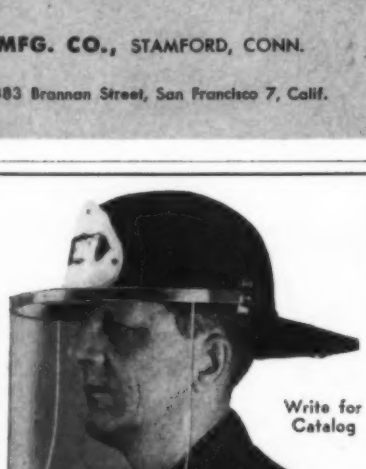
Protect Your Fireman's Face and Eyes with SAFTI-SHIELD

(U. S. Patent No. 2421427)
(Canadian Patent No. 450041)

The SAFTI-SHIELD is made of Plexiglass and Aluminum. It weighs only 14 ounces. It is easily attached to any helmet. It is crystal clear, highly heat-resistant, shatter proof, fog proof and will not discolor with use. Affords perfect protection to face and eyes against Sparks, Heat, Cold, Wind, Flying Debris, Water, Chemicals, etc.

The Safti-Shield is manufactured exclusively by:

INTERSTATE FORGING & SUPPLY CORP.
404 So. Catherine St., Middletown, Penna.



Write for Catalog

REPRESENTATIVES (dealers and distributors) WANTED

liner Queen Mary in Southampton. The fire, which started in a wardrobe in a C deck cabin, was discovered by a watchman. Three pumps and a fireboat of the Southampton Fire Brigade answered the alarm for the fire, which did only slight damage. . . . Seattle, Wash., police were checking reports of a mysterious explosion on December 29, believed a meteor, which broke windows and shook hundreds of homes in Seattle's Union Bay area the night before. Damage was slight but the explosion, which some persons said sounded directly overhead, brought a flood of inquiries to police, fire and newspaper offices. . . . Four Indians burned to death in a fire that destroyed a three-room frame house in the Birdtown community of the Cherokee Indian Reservation in Cherokee, N. C., on December 1. . . . News reports say more than 100 Chinese slave workers in a mill perished when fire razed a dormitory in Kwantung Province on the Red Chinese mainland November 22. Workers had reportedly been locked in and were trapped when fire broke out. . . . Fire, attributed to a short-circuit, swept the 4-story F. W. Woolworth Company store in Havana with loss said to be $500,000. . . . Fire of unknown origin destroyed the ward building of the 68th Italian Red Cross Hospital in Yongdongpo, suburb of Seoul, Korea. No casualties were reported, although 30 patients were carried out by hospital workers and 117 other patients walked to safety. Destruction of structure meant "total loss of hospital facilities" of the Italian volunteer group, army surgeons said. . . . Eyewitnesses at Idlewild Airport, New York, report seeing a blue-and-amber fireball across the skies over the airport. The "shapeless" object moved at great speed, about 1,000 feet aloft. Civil Aeronautics Authority is investigating. . . . Capt. Fred C. Seals, the "miracle pilot" who fell out of an airplane over Korea and fell back in again, returned home for Christmas to find his house burned down and wife and three children homeless. Fire on December 14 destroyed half the structure in Dallas, Tex.

Convention Dates

Feb. 24-27—FIRE DEPARTMENT INSTRUCTORS CONFERENCE. Annual meeting, Memphis, Tenn. Chairman, Richard E. Vernor, P. O. Box 1089, Chicago 90, Ill.

March 16-18—ARKANSAS FIRE COLLEGE. Annual meeting, Little Rock, Ark. For information contact John E. Hurley, State Fire Instructor, State Board of Education, Little Rock, Ark.

Apr. 10-12—CALIFORNIA RURAL FIRE ASSOCIATION. Annual meeting, Fresno, Cal. Secretary, Clifford A. Ommert, 55 Cambridge Way, Piedmont 11, Cal.

Apr. 6-10—OKLAHOMA FIRE COLLEGE. Annual meeting, Oklahoma A. & M. College, Stillwater, Okla. For information contact W. Fred Heisler, Training Consultant, Oklahoma A. & M. College, Stillwater, Okla.

Apr. 19-21—NEBRASKA STATE FIRE SCHOOL. Annual meeting, Grand Island, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School director, Otto B. Johannes, Columbus, Neb.

Apr. 26—NEBRASKA REGIONAL FIRE SCHOOL, Crete, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

Apr. 27-May 1—ARSON INVESTIGATORS' SEMINARY. Annual meeting, Purdue University. Director, J. L. Lingo, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

Convention Dates

May 3—NEBRASKA REGIONAL FIRE SCHOOL, Beemer, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

May 17—NEBRASKA REGIONAL FIRE SCHOOL. Broken Bow, Neb. Secretary, Russel D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

May 18-21—INDIANA FIRE SCHOOL. Annual meeting, Purdue University, Lafayette, Ind. Director, J. L. Lingo, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

May 18-21—IOWA FIRE SCHOOL. Annual meeting, Iowa State College, Ames, Iowa. For information contact Mark Brosier. Supervisor of Firemanship Training, Iowa State College, Ames, Ia.

May 20-22 (tentative)—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, New York City. Secretary, Chief Edward Clark, Box 271, Wayne, Pa.

May 24—NEBRASKA REGIONAL FIRE SCHOOL. Alliance, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

June 1-5—SOUTH DAKOTA FIRE SCHOOL. Annual meeting, Sioux Falls, S. D. Secretary, Robert W. Hanigan, c/o Pierre Fire Department, Pierre, S. D.

June 7—NEBRASKA REGIONAL FIRE SCHOOL. Ainsworth, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

June 8-10—NEW MEXICO STATE FIREMEN'S ASSOCIATION. Annual meeting and fire school, Raton, N. M. Secretary, F. W. Wynn, Hobbs, N. M.

June 9-11—KENTUCKY FIRE SCHOOL. University of Kentucky, Lexington, Ky. Chairman, Fire School Committee, John L. Thompson, Kentucky Inspection Bureau, Louisville.

June 14—NEBRASKA REGIONAL FIRE SCHOOL. Gothenburg, Neb. Secretary, Russell D. Salak, Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

June 15-18—ILLINOIS FIRE COLLEGE. Annual meeting, Smith Music Hall, University of Illinois, Champaign-Urbana, Ill. Secretary, R. W. Alsip, Box 8, Champaign, Ill.

June 17-19—UTAH FIRE SCHOOL. Annual meeting, Salt Lake City, Utah. For information, contact Chief J. K. Piercey, Salt Lake City Fire Department.

June 22-25—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting, Westworth-by-the Sea, Portsmouth, N. H. Secretary-Treasurer, Chief John W. O'Hearn, 206 Mt. Auburn Street, Watertown, Mass.

June 23-26—MICHIGAN FIRE SCHOOL. Annual meeting, University of Michigan, Ann Arbor, Mich. Secretary, M. D. Whale, c/o Department of Public Instruction, Office of Vocational Education, P. O. Box 928, Lansing.

July 8-11—WASHINGTON FIRE SCHOOL. Annual meeting, Aberdeen, Wash. For information, contact Aberdeen, Wash., Fire Department.

July 13-15—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting, Omaha, Neb. Secretary-Treasurer, Chief Ray Tiller, 319 East 5th Street, Waterloo, Ia.

July 20-24—WEST VIRGINIA FIRE SCHOOL. Annual meeting, University of West Virginia, Morgantown, W. Va. For information, contact R. E. Hanna, Asst. Director, Fire Service, West Virginia University, Morgantown.

July 27-30—MISSOURI FIRE SCHOOL. Annual meeting, University of Missouri, Columbia, Mo. For information, contact J. I. Fetters, Administrative Assistant, Adult Education and Extension Service for Firemanship Training, University of Missouri, Columbia.

Aug. 10-12—WISCONSIN FIRE SCHOOL. Annual meeting, University of Wisconsin, Madison, Wis. For information, contact R. L. Welch, Chief, T. & I. Education, State Board of Vocational Education, Madison, Wis.

Sept. 8-11—MARYLAND SHORT COURSE FOR FIREMEN. Annual meeting, University of Maryland, College Park, Md. Director, Robert C. Byrus, Fire Service Extension, University of Maryland, College Park, Md.

Sept. 14-18—VIRGINIA STATE FIRE SCHOOL. Annual meeting, Number 9 Fire House, Norfolk, Va. For information, contact Fire Marshal Clay A. Easterly, Director, P. O. Box 1112, Martinsville, Va.

Sept. 14—CANADIAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Toronto, Ont. Secretary-Treasurer, Chief Allan Clark, Fire Headquarters, Lakefield, Ont.

Sept. 15-18—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Toronto, Ont. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass. General Manager, James E. Jagger, Hotel Martinique, Broadway and 32nd Street, New York 1, N. Y.

"More protection -at lower cost to taxpayers with RCA 2-WAY RADIO"

says **Chief Radio Engineer Marshall L. Dull**
City of Wilmington, Del.

Headquarters control—dispatches protection to citizens over more than 100 square miles.

Fire fighters get on the scene sooner.

S.P.C.A. gives better service.

The police get to the spot in less time.

Parkway Police keep parkways safer.

"RCA 2-way radio gets men with 'know-how' to trouble spots—FAST. Their skilled direction in those early precious minutes speeds law enforcement, lowers fire losses—definitely saves money for our citizens."

Wilmington's unique 2-way radio system links all law-enforcement and fire-fighting facilities into one protective network. Two headquarters stations . . . one for regular service . . . one for emergency . . . control 51 two-way radio mobile units (and all fire houses).

Just one instance among hundreds where RCA 2-way radio communication is protecting taxpayers and saving them money. Learn about its value in *your* own operations. Write Dept. P-6, RCA Engineering Products, Camden, N. J. (*In Canada, write: RCA Victor Company Limited, Montreal.*)

Just off the press—new brochure giving vital facts about RCA 2-way Radio for safety. Mail coupon below.

RCA ENGINEERING PRODUCTS
Dept. 50-N
Camden, N. J.

Send me the new brochure on RCA 2-way Radio Systems.

Name_____

Station_____

Address_____

City_____ State_____

RCA **RADIO CORPORATION of AMERICA**

Persons in the News

Strathearn the "Doing-est Chief"

Called by the enthusiastic press of Paterson, N. J., his home city, the "doing-est chief" Fire Chief Hobart Strathearn had set new records in fire prevention and protection in the single year since assuming the top slot in the Paterson Fire Department.

Much of his success in getting things done stems from excellent public relations work, in which he has had the support of local citizenry, civic officialdom and press and radio. With their help he has pressed home attacks on flammable clothing, such as the "explosive sweaters"; he released rules for baby sitters and parents of small children to protect them from fire, after several lives were lost; he pounced on auto junkyards which long were an annoying fire threat to property in the burning of old wrecks. He waged war against the exasperating motorists who follow fire apparatus too closely, and he strove to clear the traffic lanes to further apparatus response to alarms.

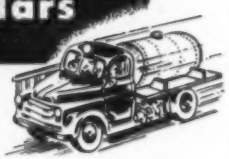
Last March, when telephone operators struck and it became almost impossible to telephone fire alarms, the Chief used press and radio to instruct people "how to report a fire during the phone strike."

The same month he introduced a regular fire prevention feature "Beware Fire," written by himself and released in both local papers. And about this time he secured the cooperation of superintendents in the three local hospitals to reduce the smoking menace. The City has a "No smoking in public places" ordinance which is now being enforced.

Fire prevention Week and Clean-up Week enabled him to give full expression to his pet subject of fire prevention. His public education campaign familiarized the public with the locations of the nearest fire alarm boxes and fire stations to their homes and places of business and brought fire fighters together with citizens, at which the former had opportunity to "sell" the latter on their jobs. A speakers' committee of firemen was formed to address local organizations and groups; monthly inspections of places of public assembly are now made; the illegal sale of fireworks was hit during the summer, and through it all, the Chief has warred relentlessly on the chief cause of fires—careless smoking, particularly "bed smokers."

His educational drive has resulted in lowering the false alarm record, among other beneficial results. Better public relations, also, has helped to bring about the replacement of six pumpers of 22 years of age or older, and installation of improvements in the fire alarm system.

Build your own fire truck for a few hundred dollars

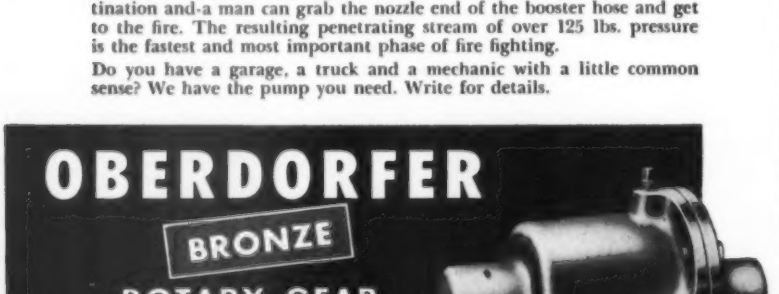


The time has come when rural fire protection should leave the "Fancy Dan" class so that every small community can do a real down-to-earth job of extinguishing fires rapidly, simply and inexpensively.

The nickel plate, red paint, gadgets and polish are good if you can afford them. But all you need for sound, economical fire protection is an Oberdorfer All Bronze Pump hooked up to the transmission of a dependable truck that carries a tank of water loaded with a good wetting agent.

Effective fire control starts just as soon as this outfit can reach its destination and-a man can grab the nozzle end of the booster hose and get to the fire. The resulting penetrating stream of over 125 lbs. pressure is the fastest and most important phase of fire fighting.

Do you have a garage, a truck and a mechanic with a little common sense? We have the pump you need. Write for details.



PERFORMANCE DATA—No. 13 PUMP SHOWN ABOVE

Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
1600	120	500'—1½"	15'	75

For complete specifications of this and other Oberdorfer All Bronze Booster Pumps, and name of your nearest distributor, write:

FIRE PUMP DIVISION OBERDORFER FOUNDRIES, INC., Syracuse, N.Y.

Haberkorn Made Chicago Fire Marshal

John J. Haberkorn, 60, veteran fire fighter and 38 years a member of the Chicago Fire Department, has been named Chief Fire Marshal by Fire Commissioner Michael Corrigan. The post is the top civil service positions in the department and pays $12,500 yearly.

Haberkorn, who has been Acting Chief Marshal, recently made top grade in an examination for the job, left vacant by the retirement of Marshal Jeremiah J. McAuliffe, brother of Chief Frank McAuliffe, head of the Chicago Fire Patrol.

Commissioner Corrigan also announced the advancement of Albert H. Peterson from Second Deputy Chief Fire Marshal to First Deputy, the position formerly held by Haberkorn.

Award of their new badges of office was delayed because both men were at work at a fire at 4100 Madison street when the promotions were announced. Later, the Commissioner made the awards in his office.

Chief Marshal Haberkorn joined the department March 27, 1915. He became a lieutenant Feb. 22, 1922; a captain Sept. 16, 1929; a battalion chief, July 1, 1937; a division marshal, July 9, 1943 and 1st deputy fire marshal, May 5, 1949. He was named Acting Chief Marshal in February, 1951.

Yuill Advanced by Southwest Research Inst.

The appointment of Mr. Calvin H. Yuill as Director of the Fire Technology Division of Southwest Research Institute has been announced by president Harold Vagtborg.

Mr. Yuill has been Assistant Director of the Division since joining the Institute in 1952.

Previous to joining the organization, Mr. Yuill was with the Gypsum Association. He also served on the Fire Protection and Fire Resistance Committee of the American Standards Association and the Committee on Fire Tests of Materials and Construction of the American Society for Testing Materials.

The Institute is presently engaged in fundamental research on fires in magnesium, and future projects include wetting and antifreeze agents and fire alarm and detecting systems, according to Mr. Vagtborg, Institute president, who believes "there is need for an unbiased, completely staffed center for fundamental and applied research in fire protection, prevention and control." That is the objective of the Fire Technology Division, he states.

Herbert Now Chief of Air Material Command at Travis Base

Donald H. Herbert has been appointed Chief of the Fire Department for the Air Material Command Depot at Travis Air Force Base, Calif. Chief Herbert was formerly Ass't Chief of Camp Shanks, N. Y., and more recently a Captain in the fire department of the U. S. Air Force at Hamilton Air Force Base at Hamilton, Calif. He resides in Vallejo, Calif.

Greenville, Mich., to Have Full-Time Chief

For the first time in its history the Greenville, Mich., Fire Department will have a full-time fire chief. He is J. Frank Van Atta former head of the Kalamazoo Fire Department, who reached retirement age in that organization. Greenville has five full-time firemen as the nucleus of its volunteer department.

Wilkinson Boulevard Vamps Install

The Wilkinson Boulevard (N.C.) Volunteer Fire Department, and Firemen's Club installed new officers on January 12. C. N. Reid is the new Fire Chief and John Withrow, is Assistant Chief. W. C. Alexander is named president.

D. G. SPENCER

West View, Pa., Department Installs

New officers of the West View, Penn., Volunteer Fire Department installed in January are: Leroy Arnold, president; Ed Stanger, vice-president; George Schwartz, secretary; Frank Walsh, treasurer. Fire officers are: John C. Farley, Chief of Department; Charles S. Gurskey and Al Hoerner, Assistant Chiefs. Company fire officers are: Engine Co. 1 Captain Ralph Moore; Engine Co. 2 Captain Howard Lenfestey, and Engine Co. 3 Captain Walter Houseberg.

Chief Z. E. Miller Retires

Fire Chief Z. E. Miller, 52, retired December 1, 1952, as head of the Fremont, Neb., Fire Department, after over 21 years service. He joined the paid force in 1931, was made assistant chief in 1942, acting chief in 1947, and chief the same year.

Chief Miller is a member of the International Association of Fire Chiefs (at present, State Vice President of the Missouri Valley Association of Fire Chiefs); International Association of Fire Fighters and a member of numerous fraternal

This will be YOUR BUSIEST EQUIPMENT

We Recommend

REGARDLESS of the size of your department, this Sharpsville Challenger will do a tremendous job. It is capable of handling fires alone, saving runs by the larger, expensive equipment. It can be equipped as a general service pumper and for emergency and life saving work. A Volunteer Department will find it fits their needs admirably, while the large Municipal Department will find it fast and easy to maneuver in traffic, a companion piece for major fires. The water supply, the maneuverability, and ease of operation make it practically self-sufficient. This body is designed for a commercial chassis of your choice and has a hose bed and large side cabinets for carrying a wide range of equipment. It can be equipped with a booster tank up to 1,000 gallons, with a front or midship mount pump, either single or multi-stage. Let us send you complete details.

Write Today

SHARPSVILLE
STEEL FABRICATORS, Inc.
Sharpsville, Pa.
Established 1860
Incorporated 1907
ALSO BUILDERS OF STORAGE AND TRUCK TANKS

Give Fires the Gate - single and double!

No. 924
Hydrant Gate Valve

No. 925
Siamese with Gates

No. 924 has all brass construction. The single wedge disc resists the strain of quick opening and closing. Packing area is unusually large.

No. 925 is a sturdy piece of equipment, practical for every department. The Siamese section is made of brass and especially strong to carry the two Single Hydrant Gates.

Your request brings you full details on all Buckeye Fire Department Accessories.

Buckeye
FIRE DEPARTMENT ACCESSORIES

BUCKEYE IRON & BRASS WORKS, DEPARTMENT E
DAYTON 1, OHIO

Another
BOYER
Custom Built Fire Truck delivered to Ogallala, Neb.

UNIVERSAL **FIRE APPARATUS CORP.**
Logansport, Ind.

Successor to BOYER — Established in 1879

and social organizations.

During World War II he played a leading part in civil defense activities and is now Fremont City Director, and Assistant Director of Dodge County Civil Defense.

He is married and has a son who is a veteran of the last war, and a daughter.

Chief Miller was tendered a banquet by members of the paid department on December 5th.

Assistant Chief J. H. Mordhorst has been appointed Acting Chief of the Department pending a civil service examination for the post. He joined the organization in 1933.

Chief MacDougall Retires

Fire Chief George A. MacDougall has retired as head of the Amesbury, Mass., Fire Department, after holding the post for 13 years. He served the department a total of 39 years. He and his record were praised at a farewell dinner given him by his friends and fire department associates. The new chief is Louis J. Bartley who has been first deputy chief since 1943. Chief MacDougall is a member of the New England Association of Fire Chiefs.

Obituaries

Chief A. J. Miller Dead

Fire Chief Arthur J. Miller, for the past ten years head of the Slingerlands, N. Y., Fire Department, died after a short illness on Dec. 16. He was a member of the department since its organization in 1928. Funeral services were held in Delmar, N. Y. Eight officers and members of the Department including Assistant Chiefs Donald Stoke and Ed. F. Gremmler served as pallbearers.

Asst. Chief J. H. Burns Dead

John H. Burns, First Asst. Chief of the Danbury, Conn., Fire Department, died in Danbury Hospital on Jan. 14. He was 56 years of age. Chief Burns was appointed to the Danbury Fire Department on March 1, 1928, after serving for seven years as a volunteer fireman. In August, 1949, he was promoted to the rank of Assistant Chief, filling a spot made vacant when Chief John H. Ireland was named Chief of Department, following the death of the late chief John H. McNamara.

A veteran of two years service in the U. S. Army in World War I, Chief Burns served with the AEF in France as a member of the 320th Field Artillery Battalion of the 82nd Division. In France he fought at Toul, Marabech, St. Mihiel and in the Argonne Forest.

TOM MAGNER.

L. M. Gosney Dead

Lambert M. Gosney, retired Eureka Fire Hose Division salesman, died in El Monte, California, on December 8th, 1952. Mr. Gosney was born October 20th, 1872, and, therefore, was eighty years old when he died. He started with Eureka as a salesman, under the southern manager, P. O. Hebert, in Atlanta, Ga., office, in October, 1910. He was appointed manager of the Los Angeles office of Eureka on January 1st, 1922, and held this position until he retired on a pension on July 6, 1946.

Gongs Muted for Radio in Toledo

Large gongs, long the primary alarm signal to Toledo, Ohio, fire fighters have been partially silenced. In January, Fire Chief Arnold F. Papenhagen issued an order calling for the elimination of the old gong program, a step designed to make it easier on the firemen's nervous systems.

The action resulted from conferences between the Chief and the welfare committee of the International Fire Fighters Union. The fire fighters who man the city's 21 fire stations, complained that the day-long ringing of the big gong is nerve-wracking, particularly when most firemen do not have to answer the call.

In Toledo, immediately after the gong sounds, the location of the fire was formally given by radio and over the station P.A. system. Under the new system, the radio signal will be given first and the gong will be sounded only for those stations actually due to respond to the particular alarm.

Fire Losses Set New High

Fire last year (1952) damaged or destroyed an estimated $784,953,000 worth of property in the United States. This is $53,548,000 or 7.3 per cent more than for 1951, $96,493,000 or 14 per cent more than for 1950.

Report of this was made January 19 by Lewis A. Vincent, general manager of the National Board of Fire Underwriters, who pointed out that the losses, when measured in dollars, are at an all-time high for the second consecutive year.

Since 1935, when fire losses amounted to $235 million, they have increased 3.3 times. Gross national product, on the other hand, which is the market value of all the nation's goods and services during each year, at the same time increased nearly five times—from $72 billion to an estimated $343 billion.

In nine-year periods the average loss is as follows: 1926 through 1934, $428,455,792; 1935 through 1943, $285,281,225; 1944 through 1952, $626,564,222.

These facts, Mr. Vincent declared, underscore the need for continuous attention to fire prevention—a need that too often is overlooked by the individual, the one whose carelessness in the last analysis is solely responsible for 90 per cent of all fires.

Mr. Vincent reported also that estimated fire losses during December amounted to $74,127,000, an increase of 8.7 per cent over losses of $68,206,000 reported for December 1951, and an increase of 13.8 per cent over losses of $65,129,000 for last November (1952).

These estimated insurance losses, Mr. Vincent pointed out, include an allowance for uninsured and unreported losses.

Here is a recapitulation of fire losses as reported each month throughout the year by the National Board of Fire Underwriters:

	1952	1951
January	$74,155,000	$68,686,000
February	69,925,000	69,136,000
March	72,254,000	71,507,000
April	67,380,000	62,965,000
May	62,354,000	58,744,000
June	58,585,000	56,403,000
July	61,675,000	52,220,000
August	56,462,000	55,416,000
September	58,949,000	53,398,000
October	63,958,000	54,660,000
November	65,129,000	60,064,000
December	74,127,000	68,206,000
TOTAL	$784,953,000	$731,405,000

When your job is drenching wet

...keep dry

Rubber work clothing that locks out wet—even the strong spray of the fire hose. Vulcanized watertight seams give the maximum protection. Here is the on-the-job flexibility and comfort you need... plus extra roominess.

U. S. REXFIRE COAT
- protective coating inside and out
- fly-front
- snap and dee ring fastener closings
- corduroy collar

U. S. FIREFIGHTER
- napped lining
- cemented, gum-strapped seams
- rapid, snap and dee ring fasteners
- corduroy collar
- throat tab

STORM KING FIREFIGHTER BOOT
- felt lining
- "shockproof"
- white outsole

★ SOLD ONLY THROUGH INDUSTRIAL AND RETAIL STORES ★

makers of

U. S. INDUSTRIAL RAYNSTERS®

U. S. ROYAL RUBBER FOOTWEAR

UNITED STATES RUBBER COMPANY

Rockefeller Center • New York

QRS

Flameproof Chemicals

QRS DE LUXE for drapery material, soft finish, dry cleanable, withstands high temperature. Instant penetration. Approved by State of California and City of N. Y.

QRS No. 8—Clear flameproofing for foliage, wood, bamboo, shades, grass rugs, etc.

QRS No. 400 for drapery material. Retails for $1.00 gal.

Write for Catalog. Dealers and Jobbers Wanted

Q R S NEON CORPORATION

Chemical and Process Division

170 North Halstead — Pasadena 8, California

BRAXMAR
GREATEST NAME IN
BADGES

Since 1879

Firemen the world over rely on Braxmar for the finest badges money can buy. We offer the widest possible selection in nickel, chrome plate, sterling silver, gold plate, rolled gold and solid gold; all of our badges and insignia are the work of experts with a lifetime of service.

Write for latest circular.

C. G. BRAXMAR CO., Inc.
JOHN G. VEIT, President — JOHN G. VEIT, JR., Secretary-Treasurer
216 E. 45th Street, New York 17, N. Y.

The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

OUT OF TOWN AID

THE discussion in this Round Table is a continuation of that which appeared in the November, December and January issues on providing fire protection to surrounding communities.

The generous response from our readers makes it necessary to carry the discussion over to this issue and next month's issue as well.

Readers are invited to send in their comments on this subject which is described in the box herewith. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Question

Allan Burton, Assistant Chief, Hooverson Heights Volunteer Fire Department, Follansbee, W. Va.: Our fire department furnishes protection for about one-half of Brooke County, W. Va. Although it is one of the smallest counties in the state, we have a lot of grass to cover.

We have two trucks, one a 1929 International truck with 385 gallons of water and seven Indian tanks and other equipment, and the other a 1948 Chevrolet with 525 gallons of water and two Indian tanks. We have never charged for any service, but accept any donations which sometimes cover costs. The most we get is good will, which unfortunately won't buy equipment.

Water supply is always a problem. We carry some and have about 24 cisterns in our community. They can only be used when the ground is frozen or dry. Dry spells almost make them unusable. Most farms have their own water supply, but often we can't get to it when it is needed.

Artie W. Logan, Chief, Smithville Volunteer Fire Department, Smithville, Mo.: We have solved our mutual aid problem by organizing a fire district in our rural area. Smithville is a small town of 1,000 population with one truck that could not leave the city limits. Two years ago a 135-square-mile fire district for the rural area was formed in Clay, Platte and Clinton counties. The district was incorporated as the Smithville and Community Fire Fighting Association. Membership is sold at $25.00 for one farm or one set of improvements. No charge is made to a member no matter how many runs are made. A charge of $50.00 is made for a run to a nonmember who receives a membership when run is paid for. We expect a small yearly assessment of membership to keep it going, but so far none has been needed.

We have two 500-gallon trucks, one carrying 450 gallons of water and the other 300. A 160-gallon portable pump is carried. Each truck has two ¾-inch booster lines with Bean and Hardie guns, 1,000 feet of 2½-inch hose and 300 feet of 1½-inch. The Association also built a 32 x 54-foot concrete block station to house the trucks and the city truck. The city pays the utilities such as water, heat, lights and upkeep of building and half of the insurance on the men and the three trucks. The two Association trucks cover the district and city and may leave the district to aid other communities. Leaving the district is left up to the judgment of the fire department as is the question of whether to take one or two trucks. Of course, the city truck must stay at home.

Most of the farms in this area have ponds for water supply and many are building new ones nearer their buildings.

Our department is all volunteer with 30 men divided into three companies. We operate both city and district trucks and get most of our training and experience in pumping by fighting rural fires.

This system has been very success-

HERE IS THE TOPIC

1. **Does your fire department provide fire protection to surrounding farm areas?**
2. **If so, do you make a charge for this service? What are your rates?**
3. **If no charge is made, do the farm districts compensate the fire departments in any other way?**
4. **If no charge is made, and the fire department is not otherwise compensated, in what way does your city benefit from this free service?**
5. **Where rural service is provided, do the farms provide a ready supply of water; or do you depend upon water carried on the apparatus?**
6. **Is your fire department paid or volunteer?**
7. **Has your system worked out satisfactorily?**

ful as the farmers are interested in having their own protection.

The Clay and Platte County Mutual Insurance Companies, State Farm Mutual and Farm Bureau pay the department a flat rate of $25.00 when we protect a building they have insured.

Walter Hately, Fireman, Bowmanville, Ont.: For a number of years we have been answering calls in the country districts with a charge of $75.00 per call for the first hour and $25.00 per hour after the first hour. Payment of these charges had to be guaranteed by the person sending in the alarm. Between trying to get it straight as to who would pay the charges and finding the mayor to get permission to go, this arrangement proved most unsatisfactory. Last year an agreement was made with the Township of Darlington for fire protection. The township paid the town a flat rate of $1,000 plus $125 per call plus $35.00 per hour after the first hour. This agreement does not cover calls for cars, trucks or grass fires, unless endangering property. The agreement was renewed again this year with a few changes, namely, a flat rate of $500.00 plus a call charge of $100 plus $35.00 per hour after the first hour. A charge of $50.00 is made for minor fires in chimneys, etc.

Regarding water supply, it is entirely up to us to find our own. This has not proven too great a handicap, as there are numerous streams, ponds, wells, cisterns throughout the township. We carry 300 gallons of water on our rural truck and get the rest wherever we can.

We are a volunteer department of eighteen men. Usually six or seven men answer the country calls. In 1951 we answered 12 calls and so far this year have had 20.

Our town council has been very cooperative, using the money collected to buy 1,000 feet of 1½-inch hose and accessories, a portable pump and a 300-gallon water tank for the truck which we use in the country.

The agreement is proving quite satisfactory, as we are now able to answer all calls promptly without seeking permission. The country people are much better satisfied as they now feel we are of benefit to them.

The cost to the township taxpayers is a minor item when spread among approximately 2,000 taxpayers. The Ontario Government also grants one-quarter of the cost to the township under the Fire Department Acts, and this year one insurance company has agreed to pay the township $40.00 per call on all places insured by them.

Norman Mattice, Assistant Chief, Pavilion, N. Y., Deputy Fire Coordinator, Battalion No. 2, Genesee County: We are a volunteer fire department in Genesee County and have the town of Pavilion to protect besides another township under contract. We operate under the block system which works perfect here. Every part of the county is blocked off in one-mile squares. Small stickers with instructions on how to call the fire department are given to each house. For instance, if the town of Batavia has a fire, the person reporting it must give the road block number, the address, his name, etc. We look the property up on our map and choose the best way of getting to the fire.

We work under a mutual aid setup.

NEW FIREWATER "5" doubles FIREFIGHTING EFFICIENCY!

THE foremost chemical penetrant, FIREWATER, *is now available* in convenient *pre-measured* tube form. Added to any piece of five gallon capacity fire apparatus, FIREWATER will more than double its efficiency by actually making the water "wetter."

With surface tension lowered to 31 dynes per square centimeter, water will spread and penetrate *instantly* instead of puddling and running off.

For back packs, CO_2 charged water extinguishers, farm spray rigs, water buckets—FIREWATER "5" is the most convenient, economical, and easy-to-use penetrant available today!

WRITE FOR FREE SAMPLE TUBE!

THE FIREWATER COMPANY
1 First Street, Los Altos, California

LEADING MANUFACTURERS OF WETTING AGENTS FOR AGRICULTURE AND INDUSTRY

LEONARD ROTARY GEAR PUMP

A NEW AND BETTER FIRE APPARATUS PUMP!

YOUR best buy because of longer service life . . . lowest cost per year. Shafts mounted on Timken Bearings eliminate wear, suction and pressure loss. Delivers 150 GPM at 150 lbs. Designed to take hard fire service. It's "the pump you can't wear out."

DEALERS WANTED

Write for Folder

National Distributor
AMERICAN FIRE EQUIPMENT CO.
717 BOYLSTON ST., BOSTON 16, MASS.

DEPENDABLE DRESSINGS

for FIRST AID, for EMERGENCY for DISASTER, for DEFENSE

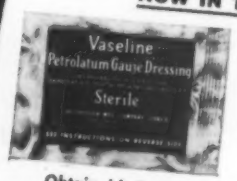
With a distinguished record of use by the medical services of the Armed Forces, by other governmental agencies, by hospitals, by emergency and disaster units, by industrial clinics and first-aid stations . . .

. . . always STERILE, always READY for immediate and easy application to dress a burn, an abrasion, and other surface injuries.

VASELINE STERILE PETROLATUM GAUZE DRESSINGS

TRADE MARK ®

NOW IN THREE SIZES:



No. 1: 3" x 36" (6 in carton)
No. 2: 3" x 18" (12 in carton)
No. 3: 6" x 36" (6 in carton)

Obtainable from your regular source of medical supplies

have been adopted by surgeons as standard procedure, by nurses as preferred matériel, by professionally-trained aid personnel as the compact, ready-made, ready-to-apply dressing of their choice.

Specify these superior dressings in the foil-envelopes to your supplier.

CHESEBROUGH MFG. CO., Cons'd

Professional Products Division · New York 4, N. Y.

VASELINE IS THE REGISTERED TRADE-MARK OF THE CHESEBROUGH MFG. CO., CONS'D

SIRENO'S *NEW* "ATOMIC ROCKET"

The Largest and Most Powerful Vehicle Siren with 360 Degree Flashing Red Lights.

Complete Range of Sizes and Styles and Mounting.

WRITE DEPT. No. 27 FOR FREE CATALOG

THE SIRENO CO. INC.

214 WILLIAM STREET *Established 1908* NEW YORK 38, N. Y.

We all have two-way radio which, to my mind, is the best thing for fire fighting there is. My company has even gone as far as taking a water survey of every one of the properties in our district, numbering around 500 houses and barns.

Our town is in the corner of Genesee, Wyoming and Livingston Counties. We work back and forth with each other which is a good policy. We have a tanker and pumper combination with 2-stage pump carrying around 1,100 gallons of water besides another pumper. Genesee County has sixteen volunteer companies and out of the sixteen we have fifteen tankers which come in mighty handy in fighting farm fires where water is short.

A number of our farmers have dug big ponds for water storage.

Genesee County is divided into four battalions with four companies in each battalion. If one company has any hot spots which are difficult to get at, they contact the deputy coordinator for that battalion. He in turn gets the rest of the companies together and have a surprise practice. We have an old folks' home in the county and are now holding fire drills there.

W. J. S. Walsh, Chief, Campbellton, N. B.: We do provide fire protection to surrounding areas. There is no charge for this service.

Our volunteer fire brigade has received (from various companies, schools, and in some cases from private individuals from outside of town) donations ranging from $200 down to $10. These donations have been placed in a separate bank account and when a fire occurs out of town the men sent by the chief are paid at the rate of $1.00 per hour from the out-of-town fund. Thus the town treasurer does not pay for any out-of-town fire fighting. But the town does allow apparatus to be taken out of town, the number of pieces, the number of firemen responding and the distance are at the discretion of the chief. For some years past the donations have been sufficient to handle this demand. These donations come from people who actually had fires.

We must depend on the water carried by tank trucks which may in some cases be replenished from wells.

Thought you might be interested in the rate of retainers and wages paid to our fire brigade. They are as follows:

1 Chief—$400.00 per year retainer plus $1.00 per hour at fires.
1 Assistant Chief—$250.00 retainer plus $1.00 per hour at fires.
3 Ward Captains—$125.00 per year retainer plus $1.00 per hour at fires.
27 firemen—$100.00 per year retainer plus $1.00 per hour at fires.

We also have ten fire police. These men respond to alarms and in the event of a fireman being absent, the oldest fire policeman gets the $1.00 per hour. But they do not get a retainer.

Regular firemen are fined for missing a fire at the rate of 50 cents per hour length of fire. These fines are placed in the funds of the fire brigade. This fund has nothing to do with town funds and is used by the brigade for any reason they wish.

G. L. Baker, Assistant Chief, Media, Pa.: We provide fire protection to surrounding areas at the rate of $800.00 a year, paid quarterly. We take care of about 25 square miles of country out-

side of town, of which fifty per cent is now residential. The $800.00 we receive is insufficient inasmuch as fifty-two per cent of all our fires lie in this territory. We are now fighting for an increase.

The water supply in the outlying districts is not too good.

W. E. Casey, Chief, Crystal City, Tex.: We do not make any charge for providing fire protection to surrounding areas. We consider this a service as a large number of farmers hold city property and use city trading area.

In some instances we can rely on the water supply of farms, but also depend on the water supply carried on the apparatus.

We are a volunteer department.

Wayne D. Fuller, Chief, Clarinda, Ia.: We provide fire protection to only incorporated areas (towns and cities).

We have two paid drivers and sixteen volunteer firemen. Our system has worked well for a town of 5,000.

Woodson D. Bennett, Chief, Salida, Colo.: We make no charge for providing fire protection to surrounding areas. Our city benefits by the use of the rural truck in any emergency in the city.

Some of the farms have regular wells or sumps to provide water in case of fire, but we also carry water on our apparatus.

We have four paid men and twenty volunteers in this department.

Delbert G. Higgins, Chief Huntington Beach, Cal.: We provide fire protection to surrounding areas only on signed mutual aid contract. There is, of course, no charge.

We must depend on tank trucks for our water supply.

We are part paid and part call.

Our system has worked well. Response for a period of twenty years has averaged seventy-eight per cent of membership, giving us more manpower at fires than full paid departments have at much less cost. Applicants for call firemen must be screened and the best available picked and arrangements made with their employers ahead of time for good response.

We are faced with the problem of county government furnishing free fire protection to rural or urban areas without benefit of fire districts.

Earl Keeler, Sr., Chief, Dowagiac, Mich.: We provide fire protection to surrounding areas at the rate of .10 per cent of total valuation per township.

We must depend on the 700 gallons of water carried on the truck for our water supply.

We are a paid department, and our system has worked out satisfactorily.

E. J. Glover, Chief, Lumberton, N. C.: We provide fire protection to surrounding areas at the average rate of $25.00 a call to be paid by the property owner.

We do not provide rural service.

Our department is paid. This system has not worked out too satisfactorily because our equipment is limited and we cannot afford to make calls of too great a distance.

J. W. Sullivan, Chief, Union, S. C.: We make a charge of $50.00 for providing fire protection to surrounding areas.

We are both paid and volunteer.

Abram Swartz, Chief, Little Falls, N. Y.: We provide fire protection to surrounding areas. Our charges are $75.00 for pumping booster or big streams

6 YEARS PROOF ON 2-WAY RADIO!

Leece-Neville

ALTERNATORS END BATTERY TROUBLES

BATTERY USED FOR STARTING ONLY

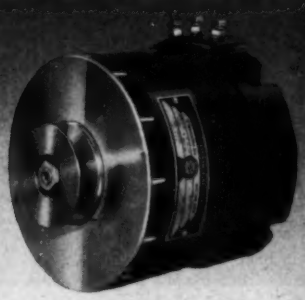
Since 1946, L-N Alternators have been eliminating battery troubles on 2-way radio vehicles... or wherever needs for current are high. Replace conventional generators with the L-N Alternator System and get

25 TO 35 AMPERES IDLING!

ENTIRE ELECTRIC LOAD CARRIED BY THE ALTERNATOR

BATTERY KEPT FULLY CHARGED

Let us arrange a demonstration of the L-N Alternator for your fleet. Or write for all the facts. The Leece-Neville Company, Cleveland 14, Ohio. *Distributors in principal cities... Service Stations everywhere.*



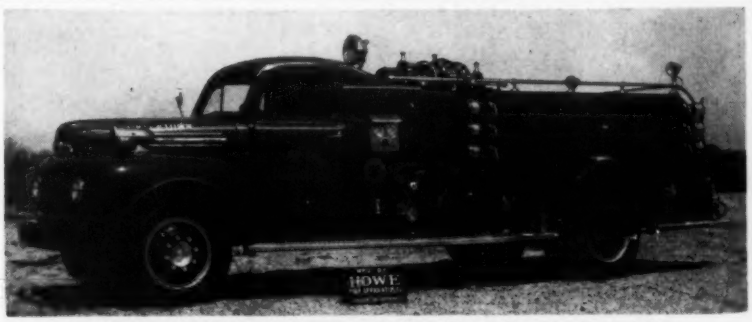
HEAVY-DUTY ELECTRIC EQUIPMENT FOR OVER 43 YEARS

YOU CAN RELY ON Leece-Neville

Be Sure to Specify Leece-Neville

ALTERNATOR SYSTEMS • GENERATORS
STARTING MOTORS • REGULATORS • SWITCHES
FRACTIONAL HP MOTORS

TRUCK BUS DIESEL OFF-HIGHWAY
PASSENGER RAILROAD MARINE INDUSTRIAL



HOWE Fire Truck Equipment Meeting Every Service Since 1872
Centrifugal, Rotary and Piston Pumps Supplied
HOWE FIRE APPARATUS CO., 1402 W. 22nd St., Anderson, Indiana

DEPEND ON

ATTWOOD HARDWARE

Fire fighting is an exacting occupation. One mistake may be the last.

Likewise, the manufacture of fire fighting trucks is a very exacting business. Every piece of equipment must be dependable to eliminate any chance of mechanical failure.

For many years Attwood has supplied over 90% of the fire equipment manufacturers with standard and special hardware and fittings.

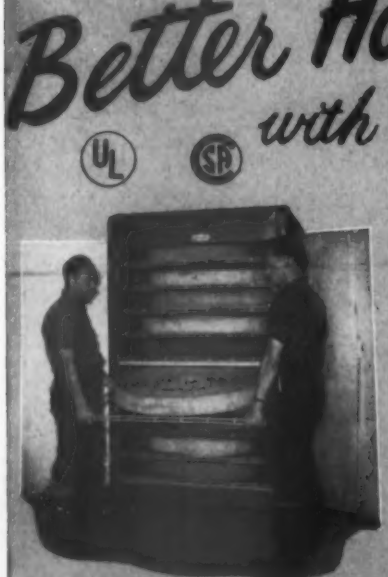
Contact Attwood regarding the manufacture of equipment to your specifications.

ATTWOOD
BRASS WORKS
GRAND RAPIDS 4, MICHIGAN

Better Hose Care---
with CIRCUL-AIR

UL SP

THE AIR CONDITIONING
FIRE HOSE DRYER



PATENTED

Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. NO OTHER DRYING METHOD IS SO FAST—SO ECONOMICAL—SO EASY TO USE.

ACCEPTED • APPROVED • RECOMMENDED

ACCEPTED as the standard drying medium in over 1500 fire departments — APPROVED by the leading testing laboratories — RECOMMENDED by fire hose manufacturers and Fire Chiefs "all over America."

If you are building, send for free copy of "Fire Station Design"

NEW HOSE DRYING MANUAL
TELLS HOW TO DRY, STORE AND CONSERVE FIRE HOSE
May we send you one?

THE CIRCUL-AIR CORPORATION
575 East Milwaukee Detroit 2, Michigan

and $35.00 per hour after the first hour; $3.00 per mile each way and $3.00 a man for the first hour and $2.00 an hour after the first hour. We are limited to sending six men.

Some farms have water holes. We carry 150 gallons of water on pumper and have a tank truck that holds 1,000 gallons.

We have six paid men and twenty-nine callmen in our department.

Our system has worked out very satisfactorily.

George H. Robinson, Chief, Batesville, Ark.: We make a charge of $75.00 for providing fire protection to surrounding areas. We are a volunteer department.

To date our system has worked out satisfactorily. An ordinance was passed recently and we have had only one run to date.

Edgar H. Tinsman, Chief, Dunellen, N. J.: We provide fire protection to surrounding areas if called in by the fire department of that area. We make no charge. We benefit by being able to call for assistance if we need it.

We are covered by hydrants in most areas. If not we use booster tanks or the nearest brook.

We are a volunteer department.

Our mutual aid system has worked out very well with surrounding towns. We also have a county mutual aid plan, but it is sometimes quicker to call the next town than to use the county plan, because we are on the borderline of two other counties.

William D. Moore, Chief, Raton, N. M.: We provide fire protection to a few residences that are just outside of city limits. No charge is made for this service. We benefit by whatever general trading they do in the city.

We have four full-paid and ten part-paid firemen.

Paid men work twenty-four hours on, twenty-four hours off. Part-paid men receive $3.50 for any alarm from 9 P. M. to 7 A. M. and $2.50 for any alarm from 7 A. M. to 9 P. M. Two of the part-paid men come to the station on every alarm, the rest go to the fire. We have radio connections through the police department from my car. Our part-paid men are all employees of either the telephone company, public service or water works. The latter two utilities are city-owned.

Leonard J. Bates, Chief, Carterville, Mo. Our department is a volunteer unit which responds to any call.

Our equipment consists of one 1940 Ford truck with standard equipment, which is city owned. The second truck is one which you might call homemade. It is a tank truck (580 gallons capacity) which was actually built by volunteers here. The chassis is an army truck, giving us four-wheel drive as well as many other advantages.

Arrangements have been made with insurance companies whereby rural landowners can have a clause added to their policy providing for the payment of $25.00 for any grass fire and $50.00 for a building to the volunteer department. This clause can be added for approximately one dollar a year.

The department consists of one paid fireman (the chief) and twenty-two volunteers. Each volunteer responding receives one dollar, no matter whether the call is a city or rural one. Often the rural truck is used in fight-

ing city fires. When it is, the city pays the crew.

The volunteer department pays the crew and gasoline bills for the rural truck. The rest of the fees collected goes into the kitty to be used for equipment.

We have a mutual aid agreement with Webb City whereby three trucks are at the disposal of one or the other at all times. So far our system has been very satisfactory, but we hope to entice more people to add the clause to their policy as a guarantee that we will be paid.

Our protection area extends about seven miles in radius (including Webb City's protection area).

Julius Pierce, Chief, Elk City, Okla.: We provide protection to areas within approximately a ten-mile radius. We make a set charge of $25.00 for this service.

Most rural areas in this part of Oklahoma have no source of water other than wells. We depend wholly on the 400-gallon supply carried on the pumper used in rural areas.

We have five paid men and fifteen volunteers.

Our system has worked out very satisfactorily. However, in the near future we hope to organize a rural-owned fire company to be housed in city fire station by selling shares to home owners living in rural districts.

F. C. Richter, Chief, Batavia, Ill.: Any one requesting fire service is required to pay a yearly fee of $3.00 to the city and to sign a contract with the city. In the event of a fire call we charge $100.00 for the call and $50.00 per piece for any apparatus sent after the initial piece has responded.

We have also responded to people who do not pay the yearly fee. This is not fair to the person who does pay. On an alarm it is necessary to go through a card file to determine if the person is signed for protection. If you refuse service to a person who is not signed up, both the city and department receive bad publicity. I believe the only answer is a fire district duly voted and set up.

We depend on what water we carry in our trucks and what is carried in milk cans or is available in stock tanks or cisterns.

We have three paid men and 12 volunteer firemen.

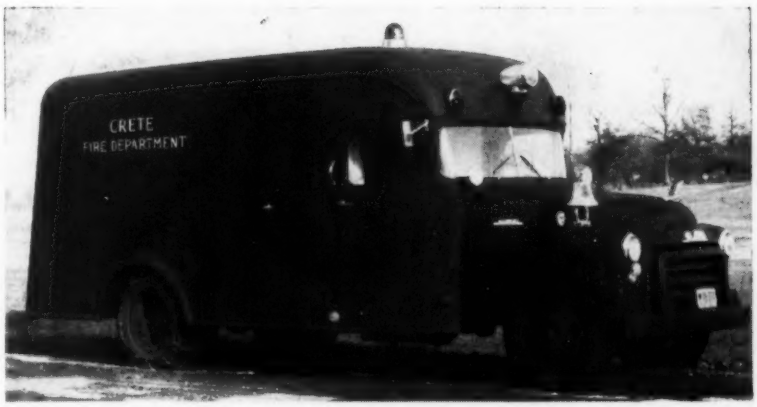
John Schweiner, Chief, Preble, Wis.: We have three fire trucks in our fire department, namely, a 1931 American LaFrance with a 200-gallon booster tank and a 200 GPM pump; a 1947 White truck with a 400-gallon booster tank and a 600 GPM, two-stage Waterous pump and a 1952 International truck with a 750-gallon booster tank and a 750 GPM, two stage Waterous pump.

A dairy farmer in our town has a 1500 gallon milk tank mounted on a Ford chassis with which he hauls water if we are in need of it.

We have six paid men who work three men to a shift. They work twenty-four hours on and twenty-four hours off. We also have twenty-six volunteer firemen who are summoned by a siren mounted on top of the station. They are paid $1.00 per hour when they answer an alarm.

We send only the International truck to the farm area in our town outside of the water district. The White and the International Trucks

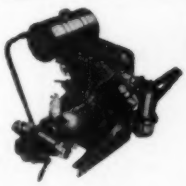
GERSTENSLAGER
Rescue Cars



Designed and built to specifications for today's public safety requirements

Requirements of the rescue car, emergency unit, or squad car today are being studied more carefully than ever before. Public safety is now viewed from the angle of civil defense as well as the more familiar every-day emergencies. The Gerstenslager Rescue Car, designed and built to individual specifications, can incorporate the newest ideas as they receive acceptance. It can also be specifically adapted to specialized needs of metropolitan safety departments, suburban communities, or volunteer departments. Members of our nationwide staff of field sales engineers are available for consultation on request.

The GERSTENSLAGER Co.
WOOSTER, OHIO — *Established 1860*



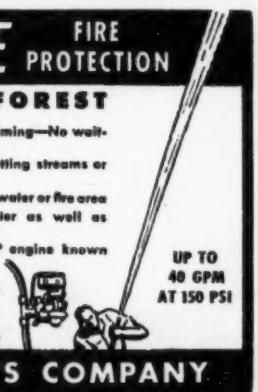
Write for Bulletin 6600-F

WEIGHS ONLY 110 LBS.

MORE **EFFECTIVE** FIRE PROTECTION

CITY • RURAL • FOREST

MODEL 6600 PUMPER—Instantly Self-Priming—No waiting when seconds count
HIGH PRESSURE—Use one or two hard-hitting streams or fire-blanketing fog-spray
LIGHT WEIGHT—Easily carried to source of water or fire area
NEOPRENE IMPELLERS—Pump dirty water as well as clean water—assure long life
POWER—Efficient 4-cycle, air-cooled 5 HP engine known and serviced world-wide
BY-PASS VALVE, SPRING LOADED GREASE CUP, NO LOSS OF PRIME, PLUS MANY OTHER FEATURES



UP TO 40 GPM AT 150 PSI

MARINE PRODUCTS COMPANY
515 LYCASTE AVENUE • DETROIT 14, MICHIGAN

The Suit that Suits...

Get real protection along with comfort. Keep warm and dry in any weather. Slip into a GLOBE suit—the suit that has been endorsed by Fire Chiefs everywhere since 1901.

The Globe gives you real lasting wear. It gives you full protection from water and weather—yet plenty freedom of action. It's a quick-hitch suit that is comfortable to wear. See it. Judge it for yourself.

Get the facts from your dealer, or write us for our latest catalog.

GLOBE DURABLE FIREMEN'S **SUITS**

GLOBE MANUFACTURING CO. PITTSFIELD, N. H.

*Take a good look at this New Powerhouse!**

LOWEST COST per kilowatt, HIGHEST OUTPUT per pound, MOST COMPACT!

For any use . . . standby, mobile, portable or stationary, the new Onan CW-5 and CW-10 give you top performance and value! Here, for the first time, are 5 and 10KW electric plants powered by engines *designed and built by Onan exclusively for electric plant use.*

Both engines are 1800 R.P.M. Weigh less and are much more compact than general-purpose engines. Two-cylinder, alternate-firing design. New vacuum air cooling. High-tension magneto ignition. Standard voltages 60-cycle A.C.

Far Out Front
IN DESIGN AND ENGINEERING

- Twin-cylinder opposed engines
- Aluminum alloy cylinder heads
- Extra-large bearings
- Excellent accessibility
- Pressure lubrication
- High performance generators
- Completely equipped with controls, instruments

Write for folder and specifications

Onan ELECTRIC PLANTS **D. W. ONAN & SONS INC.**

5711 UNIVERSITY AVENUE S.E., MINNEAPOLIS 14, MINNESOTA

answer all alarms in the water district.

We have a contract with the town of Bellevue which adjoins us to send our White truck, two paid men and three volunteers to any fire in their town limits. For this they pay us $550.00 per year.

Gibb Bird, Chief, Jerome, Ida.: We do provide fire protection to surrounding areas. No charge is made for this service. The district pays for the manpower. The farmer is supposed to supply water for fire fighting.

We have three paid men and fifteen volunteers.

This is a problem we have been struggling with for ten years and I believe have worked out a system that would be satisfactory to meet communities.

Otto J. Alletag, Chief, Warren, R. I.: We do not make a charge for providing fire protection to surrounding areas. These communities reciprocate by rendering aid to us when necessary.

We depend on water carried on apparatus for fire fighting.

We are a volunteer department.

Tom Bryant, Chief, Seymour, Ind.: We do not furnish fire protection to rural areas, but do to nearby cities and towns. No charge is made for this service.

We are a paid department.

William A. Robbins, Chief, Greensburg, Ind.: We provide fire protection to communities within the township. No charge is made for this service, as the township maintains the truck which we can use for fighting fires within our city.

We must rely on water carried by the truck as a general rule.

Our department is paid.

Multiple Company Operations

(*Continued from page* 112)

without having to worry about road conditions. It should be the responsibility of some agency in, or close to the fire service, to direct and assist the unimpeded movement of fire forces.

It is well to remember, in a serious enemy attack, incoming fire fighters might conceivably encounter the mass exodus of panic stricken people, notwithstanding the fact that in most target areas Civil Defense has designated certain routes to be reserved exclusively for emergency vehicles.

Some Further Aspects of Defense

There is universal agreement on the theory that, in at least one respect, defense against an atomic attack will be radically different from our previous conceptions of defense against normal conflagrations, if there is such a thing as normalcy in conflagrations. That difference is in the devastating blast and radio-active effects of an atomic bomb burst. Thus, in any built-up area so affected, a considerable part of the fire protection facilities, including water, communications, apparatus and personnel, may conceivably be wiped out at the outset. All of which naturally makes difficult the task of setting multiple company operations in motion, if not necessitating entire re-organizing and reconstruction of the plans for reinforcing local fire protection.

There seems also to be some agreement on the wisdom of perimeter or fringe defense, with fire forces working

in as closely as possible to "ground zero." There is little quarrel, too, with the theory that primary war time fire, or fires, must be fought by the regular fire service, leaving the control and extinguishment of fringe fires to wardens, and other first-aid fighters. Modern defense against atomic attack is apparently being organized along these lines. It is with the defense against these primary fires that we are concerned at this writing.

Thus far, no one has come up with the answer to the extent and scope of defensive measures that will be required to arrest the advance of, or stop altogether, fire such as an atomic burst would generate in an average American first grade city. Orthodox theories on the ability of water or other extinguishing agents to absorb BTU's, and to darken down flames; to shield against heat radiation, and/or ignition by burning embers, are utterly inadequate in the light of the incomprehensible heat generation and devastation that would result from an atomic attack on our cities. Therefore no definite formulas and techniques for confinement can be set forth as even approaching adequate defense measures against such disaster.

However, there are a few safe assumptions that can be advanced, based upon what is currently known about conflagrations, and the phenomena some chose to call fire storms.

The first of these is that it will take lots of water, in water curtains and water barrages, to do the job. The second safe bet is that, as has been proved by historic conflagrations, no city and no area in which such bomb attack occurs will have the water supplies and reserves adequate to the task.

Next, it is an equally safe conclusion that no one fire department, even that of the great City of New York, will be sufficient in material and manpower to set up that necessary water defense (of whatever magnitude) to contain atomic conflagrations, let alone extinguish them.

The lessons of European and Japanese defensive efforts bear out these assumptions. They attest the weakness of spreading defense too thin, and of attempting to set up and hold defensive positions without adequate supports and reserves. Many fire protection authorities in this country, as well as abroad, frankly believe there is no complete defense against the modern atom bomb.

If fire fighters are to enter zones of high devastation to perform rescue or to cover rescue groups, or to gain a particular commanding position to cut off or flank the main body of fire, they must have not only access to the zone, but according to Fire Chief Loftus of New York, they must be sure of a secondary means of egress as well. The fire service is not expendable, the Chief points out, "and only by this means can we be reasonably sure of safe withdrawal once apparatus has entered a zone of high devastation."

If a ready retreat line for the fire forces is maintained, as it should be in any fire of conflagration size, the very minimum of fire forces will be lost in the action. It is a safe conclusion that fire defense should anticipate and provide for the possible forced retirement of advanced fire fighters and rescue workers under extreme fire conditions. That means a secondary and perhaps a tertiary line of defense. As positions become untenable, the forces can retire

SEE BACK COVER

For *Volume* and *Pressure*

Specify HALE

HALE FIRE PUMPS are built in all STANDARD CAPACITIES

VOLUME *and* PRESSURE are both vital in controlling or stopping disastrous fires . . . the kind you have to fight all too often in mid-winter.

Firefighters who have used Hale FIRE Pumps *know* they can depend on a HALE for the right volume and the right pressure to fit a wide range of tough fire-fighting conditions.

In other words, they have learned through first-hand experience to appreciate a Hale's flexible range of performance and high efficiency.

Make sure of dependable *Volume* and *Pressure* in your next piece of apparatus by insisting on a Hale Fire Pump.

Write today for up-to-date bulletins on HALE FIRE PUMPS; they are built in all standard capacities.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

BADGER EMERGENCY BOAT
Designed Especially For
Rescue Work and Fire Fighting

Rugged construction to withstand hard use.

•

Exterior protected by strong Fiberglas laminate.

•

Be Ready for Spring Floods
ORDER NOW

•

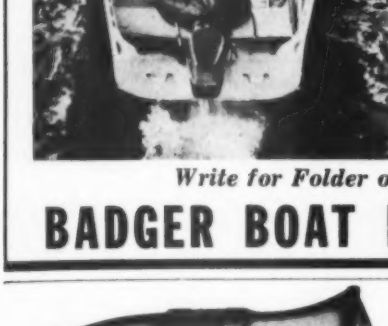
Use as water patrol or mobile trailer unit.

Equipped to suit specific use.

DEALER INQUIRIES INVITED

Write for Folder on Badger 'E' Boat.

BADGER BOAT BUILDERS COUDERAY, WISCONSIN



MODEL 20 SIRENLITE
for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

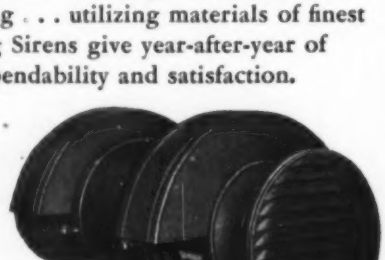
STERLING SIRENS

- **HANDSOME**
- **RUGGED**
- **RELIABLE**

Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

MODEL M GENERAL FIRE ALARM SIREN
for Volunteer Systems

Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.



Complete line of Siren Equipment • *Bulletin on Request*

THE STERLING SIREN FIRE ALARM CO., INC.
58 ALLEN ST., ROCHESTER 6, N.Y.

under protection of powerful steams of pumpers in the primary or advanced defense line, to reform and take up their position in a secondary defense line and in turn protect the advanced forces.

Behind all these fire forces in action, are the reserves funnelling-in to be ready to be thrown into the defense as occasion demands, or to be used on the offensive, if changing fortune permits.

These rear ground reserves are important in large scale fire fighting, of all types. How often has it happened in multiple alarm fires the fire forces were totally unable to scrape up sufficient hose out of apparatus on the fire ground, to lay a vitally needed extra line to protect exposures, or a rescue effort, or to take advantage of a shift in wind or other change in the battle.

Response in Strength—Convoys

We have said it has been demonstrated that large numbers of fire fighting units and their personnel can be mobilized and moved in force over the highways to the scene of a real or simulated emergency, from far distant points. It has been established as well that the total response of resources of not only several counties but of an entire state, can be made available night or day, should it be necessary. As the same time, it has been shown that such a major operation cannot be undertaken and executed with the same efficiency usually found in multiple-company operations within a single municipal fire department. There is a vast difference between mobilizing reinforcements all of which are integral to a single large fire department, and mobilizing units from a wide range of departments including both paid and volunteer.

Assuming that conditions such as may be encountered in wartime may call for response in force, a number of factors should be considered—

1. **Convoy**—The first is that fire forces can respond in mass under controlled conditions.

2. **Communications**—As pointed out elsewhere, one of the first requisites of rapid assembly and dispatch of reinforcements are adequate communications facilities, and control over them by capable authority.

3. **Meeting Places**—Setting up of rendezvous and assembly points; aid checks, and mobilization points. Response by convoy may call for incorporating the fire forces with other Civil Defense integers, or fire units may travel in their own convoy. Either way there must be a meeting place where the convoy forms. There must be a place where it is "checked in" for orders, and the necessary guides are gathered. And there must be an objective for the group moving in to aid. This may be a "park" or "pool," or it may be occupancy of fire stations left empty by the "home" fire department, or it may be to occupy a segment in the line of defense or attack.

4. **Proper command and authority** is required to organize and direct mobilization, response, reporting-in and other details of such large-scale operations. A requisite is that convoys including fire control facilities shall have as leaders and sub-leaders picked personnel from the fire service and not persons unfamiliar with it.

5. **Traffic control.** Most aid in multiple company operations is motorized and travels by highway and road. In

great emergencies it may be expeditious to move aid by rail, ship, or even by plane. Actually, reinforcements were moved by plane to Maine during the New England forest fires. Airplanes and helicopters are already in regular use guarding the nation's forests. Given the landing fields, and planes, whole companies and their accoutrements can be transported by air.

We have said Civil Defense has designated certain primary and secondary highways for mass movement of equipment and manpower. A fallacy of present multiple company operations in some cities and counties is the fact that while certain parkways are designated primary routes, the fire forces cannot use them in tests, but only if and when a genuine public emergency occurs.

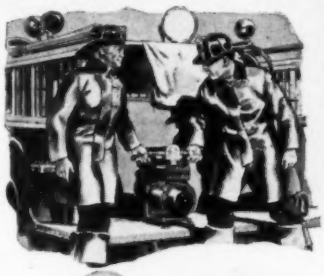
6. **Components** of fire convoys of any size should include additional facilities, depending upon such factors as the number of fire units and personnel in the column, distance to be traveled, weather and, of course, the nature of the aid to be rendered. In short, convoys should be as nearly self-sustaining and self-contained as possible. This means that in addition to the fire apparatus, there should be (a) one or more fuel supply vehicles; (b) ambulance (and preferably first aid crew); (c) heavy car wrecker; (d) utility or emergency unit (to carry lift pumps, extra supplies, fittings, etc., that may be needed). In operations of magnitude, which may be long drawn out, a rolling canteen is essential. And of course, there must be the command car, preferably two, radio-equipped. Provision should be made for fuel and lubrication, and preferably for water and food, for at least a 24-hour period of operation without relief.

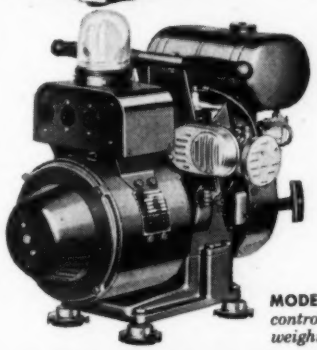
7. **Manpower.** Multiple company operations call for maximum crews for all fire units engaged in the action. Again quoting B. Richter Townsend, Chief of the Bureau of Fire, New York State: "Generally speaking, an efficient operation requires 27 men per piece of (fire) equipment to operate over a 24-hour period. Experience would also seem to indicate that in this type of operation replacements are needed every two to three hours."

8. **Guides and escorts** are essential, both to facilitate assembly and road response, and to direct movements within the fire or sub-fire zones. Sufficient pilots should be provided to accommodate individual units after the convoy breaks ranks.

9. **General orders** governing the convoy should include such other details as: (a) convoy identification by number of other designation, and of each individual unit (preferably by large key numerals mounted on windshields or vehicle fronts); (b) intervals between convoy units; (c) speed regulations; (d) use of siren or other warning devices; (e) size of crews responding (personnel is usually limited to not more than eight men); (f) stop-and-go signals; (g) rules of conduct for personnel, and (h) procedures for reporting at aid check points, etc.

10. **Records of operations** should be the responsibility of command. A log should record chronological essentials of arrival and departure, mileage, fuel consumption, and any details concerning accidents, delays, etc. The communications' vehicles should also log all messages and orders, as well as names of unit commanders and other essential related details.





KOHLER
ELECTRIC PLANTS
Independent Source of Electricity

Aids fire fighting and rescue work

Municipal and volunteer fire departments use portable model for floodlights, power tools, resuscitators, smoke eradicators, rescue equipment. Develops 1500 watts. Fits into small space. Equipped with 4 receptacles, pilot light, double carrying handle. Rubber-tired hand truck available. Other sizes, 500 watts to 30 KW. Also stand-by models to operate siren, signals, when central station power is cut off. Write for folder 6-M.

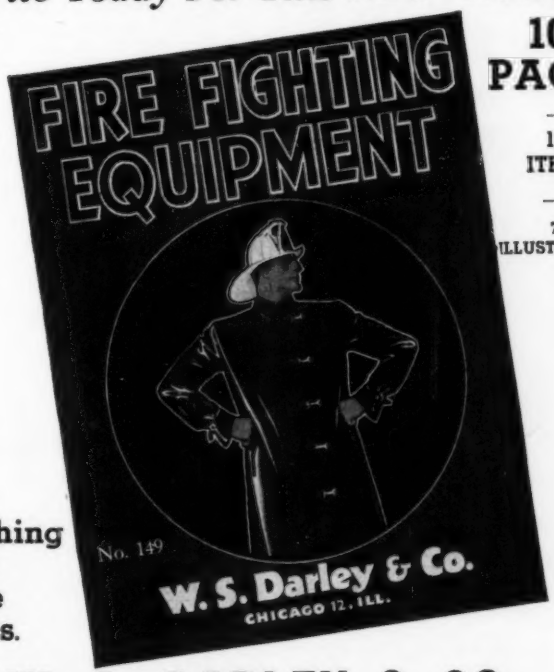
MODEL 1.5M25, *1500 watts, 115 volt AC. Manual control. Weight 130 pounds. Also 115 volt DC weighing 101 pounds.*

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

Write Today For This NEW Catalog



108 PAGES

1100 ITEMS

750 ILLUSTRATIONS

Everything for Fire Depts.

W. S. DARLEY & CO.

ESTABLISHED 1908

CHICAGO 12, ILLINOIS

DESIGNED BY FIREMEN

FOR YOU

300 Watt 110 Volt Floodmaster Light. Burnished cast aluminum lamp housing and base. Hubbel twist lock male connector in base. Weighs only six pounds. Use with your 110 volt generator or plug into neighbor's outlet for plenty of light at every fire.

$21.00

New! Aluminum battery holder to fit 9½ volt Burgess batteries.

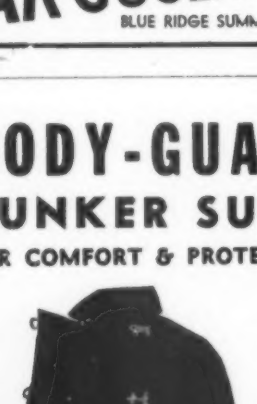
ARGUSLITE CO.

BLUE RIDGE SUMMIT, PENNA.

BODY-GUARD

BUNKER SUITS

FOR COMFORT & PROTECTION



WE ARE DISTRIBUTORS FOR

SIREN BOOTS

We have been supplying **FIREMEN'S CLOTHING** for over 25 years.

Any fireman can have a catalog by writing —

BODY-GUARD MANUFACTURING CO.

ST. JOSEPH • • MISSOURI

News of the Manufacturers

(*Continued from page* 126)

the emergency came they were ready, the firemen knew how to use them, and then prevented what could easily have been a major disaster.

"The least we can do is pass along an editorial Thank-you to the firewards who recognized a need and saw to it that the equipment was on hand when it was needed.

Halligan Tool Gets Nod

William J. Casey, Director of Public Service, City of Lawrence, Mass., has filed a bill with the Massachusetts Legislature intended to make it mandatory to equip all city and town police departments maintaining cruiser service, with a forcible entry tool and one or more all-purpose masks.

The bill, which will be presented by Representative Joseph Conley of Lawrence, specifies "the forcible entry tool shall be of the Halligan Tool type or some other similar tool." The all-purpose mask "must be approved by the U. S. Bureau of Mines."

Cisterns for Rural Fires

"Fight Farm Fires—Build a Concrete Cistern" is the title of a very useful illustrated folder published by the Portland Cement Assn., 33 West Grand Avenue, Chicago 10, Ill.

The folder gives detailed instructions on how to build a farm cistern to hold 3630 gallons of water for fire fighting, how to provide a suction intake for a fire engine, and other essential details. The folder is fully illustrated with photographs and drawings. For fire departments protecting farm areas, this document proves very helpful. A copy may be secured by writing the Association.

New Portable Power Megaphone

Known as the "Little Bull," a new portable power megaphone has been introduced by Austin Lee, Inc., 1624 Eye Street, NW, Washington, 6, D. C.

It is said to be the only all-in-one power megaphone on the market. It operates on a magnetic amplifier without any electronic amplifier or vacuum tubes. It is powered by 6 standard flash light #2 batteries and is said to have a range of up to ¼ mile.

Other features are its compactness—it measures 8½ in. x 11 in. high, and its lightweight—5½ lbs.

"Little Bull" is reported used by the Armed Forces, in fire fighting, civil defense, and by police and rescue units. It is approved by the Federal Bureau of Prisons.

Motorola Appoints New Vice-President

Election of John Silver, formerly general manager of the Communications and Electronics Division, to the position of vice-president in charge of operations of the division is announced by Paul V. Galvin, president of Motorola, Inc.

Mr. Silver joined Motorola in 1944, and was appointed general manager of the Communications and Electronics Division in 1949. Prior affiliations included 12 years in engineering at Crosley Radio Corporation and several years as chief production engineer for Collins Radio, Cedar Rapids, Iowa. He received his bachelor of science degree in Engineering from Ohio State University, and a master's degree in Business Administration from the University of Chicago.

DeCoursin Heads FWD Sales

G. F. DeCoursin has been appointed General Sales Manager of The Four Wheel Drive Auto Company, Clintonville, Wis., it was announced recently by Robert A. Olen, President and General Manager of the Company.

DeCoursin, familiarly known as "Joe," came to FWD in 1936. Starting in the factory, he became thoroughly familiar with the manufacture of FWD trucks. His promotion from one position to another was rapid, involving purchasing, production and application of the product.

In 1945 he was made Manager of the Standards Department, his interests also including sales and business problems. He attended the University of Wisconsin and the University of Iowa, on leave of absence, concentrating on business and sales management.

He was advanced to the Sales Department early in 1949 and in 1950 became Field Sales Manager in charge of all the sales activities of FWD dealers and salesmen. Since then, he has spent most of his time on the road working with representatives in practically every part of the nation.

New Darley Catalog Available

W. S. Darley & Co., 2810 Washington Boulevard, Chicago 12, Ill., has just issued its new comprehensive Fire Equipment Catalog No. 149 describing and illustrating its wide line of fire fighting apparatus and appliances.

The book contains 108 pages, has 1,100 items and 750 illustrations, with a ready index.

The catalog is available to fire department officials, fire chiefs, firemen, free of charge.

New Village Fire Fighter

C. F. Kadas Co., Oceana, Va., has introduced a small fire fighting unit suitable for a wide range of operations. The apparatus is furnished with pump, booster tank, hose and turret nozzles. For rural use, the booster tank is increased to 350 gallons and the turret pipes omitted. A 250 GPM Handy Billy portable pump is carried in the rear. Unit is also equipped with a 300 GPM two-stage high pressure pump, suction hose, 150 ft. of high pressure hose, with Myers gun-type nozzle, ladders and miscellaneous equipment.

Detailed information may be secured from the above company.

Dickson Appointed Kidde V.P.

The election of R. L. Dickson to vice president-controller of Walter Kidde and Company Inc., was announced recently by John F. Kidde, president of the company.

Mr. Dickson joined Kidde in 1941, became assistant to the controller in 1943, and controller in 1947. He is a graduate of Dartmouth College and the Amos Tuck School of Finance, a member of the National Tax Committee of

the Controllers Institute of America, and a former president of The Newark Control of the Institute. He resides in Upper Montclair, New Jersey.

Millionth Briggs & Stratton Engine

The Briggs & Stratton Corp. of Milwaukee recently celebrated production of its millionth engine made in the year 1952. The Company claims leadership in production of gasoline engines for a vast range of applications, including powering of light plants and water systems, etc., used by the fire service.

Monitoradio Moves to Chicago

Monitoradio, a line of receivers and transmitters for mobile or stationary communications systems of municipal, state or volunteer fire departments, has transferred its sales offices to 1604 W. 92nd Street, Chicago 40, Ill., it was announced recently by Roy True, president of the Radio Apparatus Corporation, Indianapolis, manufacturers of the equipment.

The Monitoradio line provides receivers operating FM and AM in the 30 to 50 FM, 108 to 149 AM, and 152 to 174 FM Mc ranges.

I. A. F. C. Board of Directors Meet

The Board of Directors of the International Association of Fire Chiefs, meeting at the Hotel Martinique, New York City, February 2-4, 1953, heard reports of continuing progress. Those in attendance included:

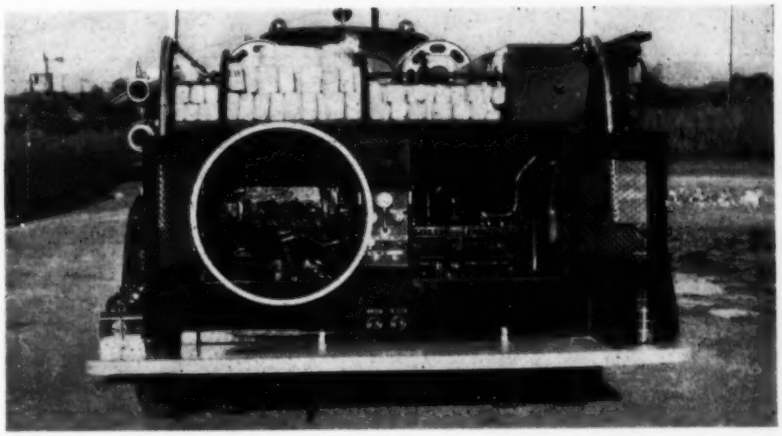
Chief G. R. McAlpine, Oklahoma City, Okla., President, I. A. F. C.; Chief Henry G. Thomas, Hartford, Conn., First Vice-President; Chief Gray Burnett, Ottawa, Ont., Second Vice-President; Jay W. Stevens, San Francisco, Cal., Executive-Secretary; Ex-Chief Daniel B. Tierney, Arlington, Mass., Secretary-Treasurer; Chief Joseph A. Giammatteo, Glen Echo, Md., Director, Eastern Division; Chief Wayne E. Swanson, Rockford, Ill., Director, Great Lakes Division; Chief Ray Tiller, Waterloo, Ia., Director and Secretary-Treasurer, Missouri Valley Division; Chief Walter R. Messer, Keene, N. H., Director, New England Division; Chief William J. Taylor, Burbank, Cal., Director, Pacific Coast Inter-Mountain Division; Chief Henry R. Chase, Miami, Fla., Director, Southeastern Division; Fire Marshal William J. Scott, Toronto, Ont., Director, Canadian Division; Chief Rudolph H. Swanson, Jamestown, N. Y., Immediate Past President; Chief L. C. Canning, Midvale, Utah, Chairman of Exhibits.

James E. Jagger, General Manager, I. A. F. C., and Eugene Davilla, Assistant to the General Manager, I. A. F. C., New York, N. Y.; Fred Shepperd, Roi B. Woolley and I. H. Case, FIRE ENGINEERING, New York, N. Y.

Also, Chief G. A. Mitchell, Opelika, Ala., Secretary-Treasurer, Southeastern Division; Chief A. H. Koltonski, Rutland, Vt., Secretary-Treasurer, New England Division; Chief Charles A. Delaney, Lakewood, Ohio, Secretary-Treasurer, Great Lakes Division; Chief Edwin J. Clark, Wayne, Pa., Secretary, Eastern Division.

Chief E. J. Bandgren, Muskegon, Mich., President, Great Lakes Division; Chief J. N. Farmer, Petersburg, Va.; Chief John H. Alderson, Los Angeles, Cal., Past President, I. A. F. C.; Chief Raul Gandara, Insular Fire Service, Santurce, P. R.; Chief S. W. Edmondson, Pasadena, Cal.; Dr. Keith Arnold, University of California; James Mace, Deputy Forester, California; Ex-Chief John J. McCarthy, Fire Consultant, New York Hotel Association; George Clough, Fire Marshal, Nassau County, N. Y., Chairman, Committee on Arson; Percy Bugbee and

Can your supplier say this about your high pressure pumps?



D. B. Bardell, of COAST MANUFACTURERS, California fire truck builders, says "We have been installing Myers high pressure pumps in our apparatus for over 5 years with complete satisfaction. Each pump performs better than its advertised rating. *Our service problems have been so few they are not worth mentioning.*" Ask your supplier for Myers "Bulldozer" pumps on your equipment. In the Pacific Northwest, Myers pumps are distributed by Mitchell, Lewis & Staver, Portland. The F. E. Myers & Bro. Co., 243 Orange St., Ashland, Ohio.

CAIRNS FIRE HELMETS

LEATHER ALUMINUM PLASTIC

REGULATION and DROP BRIM STYLES

Write for Catalog 341

CAIRNS & BRO., Inc. - Allwood, Clifton, N. J.

SINCE 1836

"MORSE"
SHUT-OFF NOZZLE
and PLAYPIPE
COMBINATION

The World's Finest

Fig. 156

F. N. McINTIRE BRASS WORKS
377 Putnam Ave., Cambridge 39, Mass.
1837 - - - - - - - - - - - 1953

FIRE and POLICE
UNIFORMS

SHIRTS
BADGES
CAPS
ACCESSORIES

RUSSELL
UNIFORM
NEW YORK

RUSSELL UNIFORM CO.
132 Lexington Ave.,
New York 16, N. Y.
Please send free catalog checked below:
☐ Fire Department Uniforms and Equipment
☐ Police Department Uniforms and Equipment
Mr. .....
Address .....
City ..... Zone ... State .....

Horatio Bond, National Fire Protection Association, Boston, Mass.; George Swan, National Board of Fire Underwriters, New York, N. Y.; A. C. Hutson, Fire Consultant, East Orange, N. J.; Hugh Walker, American - LaFrance - Foamite Corporation; Earl Scott and William Eckman, Scott Aviation Corp; Arthur Sullivan, James Rustic and Neil Slevin American District Telegraph Co.; Francis Brigham, Oren-Roanoke Co.; Ward Grantham, The Gamewell Co.; James Arnott, Wilson & Cousins, Toronto, Ont.; Deputy Chief W. F. McCartney, Toronto, Ont.

Also Ex-Chief Harold J. Burke C-O-Two Fire Equipment Co., Newark, N. J.; Chief Peter Loftus and Deputy Chief Thomas O'Brien, New York Fire Department; Ex-Chief Andrew T. Callahan, Harrison, N. J.; Ex-Chief Frank J. Ertle and Chief Thomas J. Maloney, Jersey City, N. J., and Chief George Bonin, Hoboken, N. J.

President G. R. McAlpine of Oklahoma City, who presided, set forth ten objectives: 1. Increased membership; 2. Furtherance of the national fire prevention (home inspection) program to reduce the deaths by fire; 3. Continuance of the research on firemen's salaries and extension of the study into the fields of pensions and tenure of office of fire chiefs; 4. Expansion of the Association's News Letter; 5. and 6. Further cooperation with the Headquarters Office and more complete reporting; 7. More important part to be played by State Vice Presidents; 8. Keeping I. A. F. C. affairs on a business basis; 9. Continuing cooperation with allied organizations; 10. Encourage further aid of members.

President McAlpine and Past Presidents Swanson and Alderson reported on important meetings with civil defense and research groups in Washington. The need for coordinating the nation's fire defense research was also emphasized by James Mace, California State Forester and Dr. Keith Arnold of the University of California. The Board adopted a resolution presented by Chief William Taylor of Burbank, Cal., urging broader fire research.

President McAlpine appointed the following committee chairman, with power to name their own members: Executive: President and two Vice-Presidents; Publications: President, Vice-Presidents, General Manager and Fred Shepperd; Budgets and Finance: Chiefs Henry Thomas, Gray Burnett, Ray Tiller, W. J. Taylor; H. R. Chase; Communications: Roi B. Woolley; Arson: Fire Marshal George Clough; Radiological Hazards and Control of Fuels and Gases: Mathew Braidech; National Fire Prevention: Jay W. Stevens; Constitution and By-Laws: Fred Shepperd; Economic Status of Fire Chiefs: Chief William Fitzgerald; Legislation: Chief W. J. Taylor; Exhibits: Chief L. C. Canning; Program: Fred Shepperd; American Standards Association Cooperation: Chief John J. McCarthy; FCDA Fire Advisory: Fred Shepperd and Chiefs McAlpine, Alderson, Swanson; NFPA Apparatus: Chief Henry Thomas; NFPA Wearing Apparel: Frank Kridel; Fire Extinguisher Manufacturers (Joint Committee): Fred Shepperd.

The board acted upon a request of Chief J. N. Farmer, Petersburg, Va., and protested that state's law which requires fire apparatus to come to a full stop on red lights.

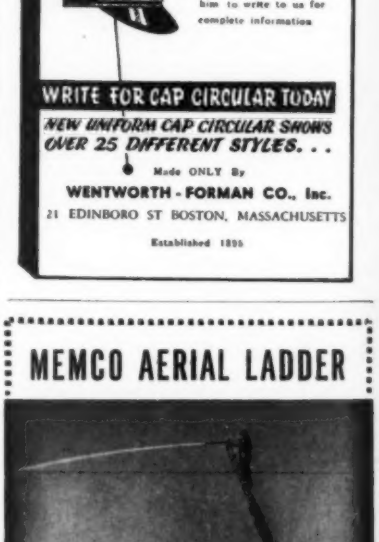
Reports of the various committees were heard, and the Board also received its General Manager's statement recording the progress made. Membership in all lines is increasing (three new manufacturer sustaining members were added

Insist On
Wentworth
"HEAD-MASTER"

Over 500 Stores, Uniform Manufacturers, and Fire Equipment Dealers in the United States and It's Territories, handle the "Head-Master" line of Uniform Caps. If your uniform dealer does not have "Head-Master" Uniform Caps, TELL him to write to us for complete information

WRITE FOR CAP CIRCULAR TODAY
NEW UNIFORM CAP CIRCULAR SHOWS OVER 25 DIFFERENT STYLES. . .
Made ONLY By
WENTWORTH - FORMAN CO., Inc.
21 EDINBORO ST BOSTON, MASSACHUSETTS
Established 1895

MEMCO AERIAL LADDER



The MEMCO AERIAL LADDER is an economical all-metal ladder unit designed to be installed on existing truck or to be installed on new equipment by your fire truck manufacturer. Electrically raised and lowered by power from the truck battery.

For details write . . .
MEMCO DIVISION of
DE-LUX NEON MFG. CO.
1007 N. W. 36th Street
Oklahoma City 3, Okla.

last year); Association finances are in good condition; the new Headquarters Office is an attraction; number and extent of publication mailings are growing (over 10 tons of literature mailed to members in 1952).

The Board devoted considerable time to discuss a suggested communications section, voting it down in favor of the expanded Communications Committee which would include representatives of the International Municipal Signal Association, National Fire Protection Association, International Association of Fire Fighters and other allied groups.

Speaker at the February 2nd luncheon was Percy Bugbee, General Manager, NFPA, who outlined his association's numerous activities. On the 3rd, Jay Stevens moved the large luncheon group with his message on the slaughter of children and others by fire and the need of home fire inspections. On the final day the Board members were the guests of the National Board of Fire Underwriters, which pledged its wholehearted support.

Annual Conference to Be Held in Toronto

A most encouraging picture of the forthcoming joint IAFC-Canadian Conference, scheduled for Toronto, September 14-21, was painted by Canadian representatives James Arnott and Deputy Chief W. F. McCartney of the Toronto Fire Department

Individual division representatives reported accelerated progress in every endeavor, and prospects for coming divisional conferences are bright. Members of the Board devoted considerable discussion to problems of national fire defense during wartime, and acted upon Chief Alderson's recommendation that the Defense Department work more closely with fire services in improving fire research and civilian defensive measures against possible enemy raids.

It was voted to hold the Houston, Tex., Conference the week of October 17-21, 1954.

The Board voted to submit to the Toronto Conference a plan for sharing the expenses of divisional secretaries to Board meetings.

Better Public Relations in Use of TV and Radio

Better public relations were urged, particularly in the use of television and radio. It was pointed out how careless, unconsidered interviews of firemen on TV and radio can create false opinions of the fire service.

On February 3rd the American-LaFrance-Foamite Corporation entertained Board members and guests at a cocktail party.

As a final gesture, the Board adopted a resolution requesting Jay Stevens to represent the IAFC at the forthcoming Coronation of the Queen. Mr. Stevens' trip is a gift from the Pacific Coast fire chiefs.

Other resolutions adopted covered standards of ethics for guidance of divisions; refusal to endorse a suggested change in sprinkler installation on the West Coast; greater cooperation between government and civil authorities in fire control, and approval of a proposal to produce a national standard of uniformity in design of gasket ways and gaskets for hose.

A LETTER FROM LAWRENCE

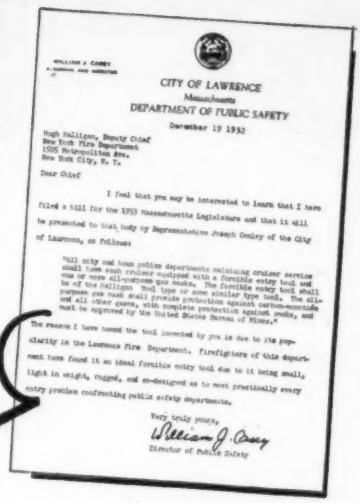
LAWRENCE, MASSACHUSETTS, that is

We feel you will be interested in a Bill being presented to the Massachusetts Legislature by representative Conley of Lawrence. It reads as follows:

"All city and town police departments maintaining cruiser service shall have each cruiser equipped with a forcible entry tool and one or more all-purpose gas masks. The forcible entry tool shall be of the Halligan Tool type or some similar type tool. The all-purpose gas mask shall provide protection against carbon-monoxide and all other gases, with complete protection against smoke, and must be approved by the United States Bureau of Mines."

and Director Casey of the Department adds—

We quote



CITY OF LAWRENCE
Massachusetts
DEPARTMENT OF PUBLIC SAFETY
December 19 1952

Hugh Halligan, Deputy Chief
New York Fire Department
1505 Metropolitan Ave.
New York City, N. Y.

Dear Chief

I feel that you may be interested to learn that I have filed a bill for the 1953 Massachusetts Legislature and that it will be presented to that body by Representative Joseph Conley of the City of Lawrence, as follows:

"All city and town police departments maintaining cruiser service shall have each cruiser equipped with a forcible entry tool and one or more all-purpose gas masks. The forcible entry tool shall be of the Halligan Tool type or some similar type tool. The all-purpose gas mask shall provide protection against carbon-monoxide and all other gases, with complete protection against smoke, and must be approved by the United States Bureau of Mines."

The reason I have named the tool invented by you is due to its popularity in the Lawrence Fire Department. Firefighters of this department have found it an ideal forcible entry tool due to it being small, light in weight, rugged, and so-designed as to meet practically every entry problem confronting public safety departments.

Very truly yours,
William J. Casey
Director of Public Safety

"The reason I have named the tool invented by you is due to its popularity in the Lawrence Fire Department. Firefighters of this department have found it an ideal forcible entry tool due to it being small, light in weight, rugged, and so-designed as to meet practically every entry problem confronting public safety departments."

Again—'Nuff Said! → ORDER NOW

THE **HALLIGAN TOOL**

M. A. HALLIGAN • 1505 METROPOLITAN AVENUE, NEW YORK 62

"DOES EVERYTHING—EVERYWHERE—TEN TOOLS IN ONE"

Quick-Starting Portable . . . HALE FZZ

The FZZ will supply from draft 60 GPM at 100 lbs. and 100 GPM at 70 lbs. Starts easily and quickly in all types of weather.

Firefighters are pleased with the quick-starting ability of the Hale type FZZ Portable Pumping Unit—an especially valuable feature in freezing weather. The 4-cycle single cylinder 8¼ H.P. engine ensures ease and speed in starting . . . and plenty of power to the direct-connected Hale Pump. NOTE: Discharge adapter available for 2½-inch fire hose.

Many FZZ owners use a Hale 2½" adapter for pumping through a long single 2½" line to a fire distant from source of water. They then wye at the fire end into two 1½" lines providing two capable fire streams.

Write for FZZ Folder. Let us know if your Company wants a demonstration.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.
FIRE PUMPS IN ALL STANDARD CAPACITIES

AT LAST!
A COMPLETELY AUTOMATIC

For 6, 12 or 24 Volt Batteries with 10, 15 or 20 Amp Capacities

BATTERY CHARGER
FOR
FIRE FIGHTING VEHICLES
AUTOCHARJER

Automatic Voltage Regulation.

No moving parts.

Safe—Nothing to cause sparks.

Designed, time-tested and proven to give completely safe unattended operation.

Carries Electrical loads to its full capacity without allowing the Battery to discharge thus allowing electrical checks to be made indoors without starting the engine.

Marine Fire Fighters write for "CONSTAVOLT" Marine folder. Units up to 7KW for dockside Fire-Boat use.

LA MARCHE MFG. CO.
NATIONAL SALES
WAKEFIELD, R. I.

Morning Pride
FIRE SUITS

Fleece Lined Natural Rubber

Flannel Lined Combined Duck

High Quality Army Duck

•

SUSPENDERS
MITTENS
GLOVES
DETACHABLE LININGS

•

Free Literature Available

See Your Local Dealer or Write
MORNING PRIDE MFG. CO.
1986 HOME AVE., DAYTON 7, OHIO

Wherein are answered questions relating to various problems in Fire Protection

Pressure in Standpipe

To the Editor:

We in our department have become involved in a discussion regarding a standpipe. We know that with a standpipe 100 feet tall when filled to the top and a pressure gauge at the bottom, the reading will be 43.4 pounds.

Some of our men contend that when pressure is applied at the bottom from a pumper, the pressure is equallized and the reading would be the same at the top and bottom.

Would you please explain what happens under these conditions? I maintain that the gravity of the water in the standpipe cannot be overcome with additional pressure from a pumper.

E. J. L.

Answer: If there is a column of water in a standpipe 100 feet high, this column will exert a static pressure of 43.4 pounds per square inch.

If a pumper is attached to the street connection of the standpipe and pressure is applied to the water in the standpipe, the pressure at the top of the standpipe will be 43.4 pounds less than that delivered by the engine.

No matter how the pressure at the base of the standpipe may vary due to pump operation, the pressure at the top of the standpipe will, at any instant, always be 43.4 pounds less per square inch than that at the base of the standpipe.

The pressure due to the weight of water in the standpipe cannot be neutralized with additional pressure from the pumper.

Electrical Hazards on Metal Aerials

To the Editor:

In the July, 1952, issue of FIRE ENGINEERING, Page 522, you wrote that a man on a steel aerial ladder which comes in contact with an overhead high voltage wire should suffer no dangerous flow of electric current through his body whether the truck was grounded or not.

I agree with your statement, but would this still hold true if said steel aerial were to come in contact with two or more high voltage wires of same or varied voltages?

Also in either case, wouldn't any person who should happen to be touching the ladder truck, be forming a conductor to the ground?

Our company recently had the aerial come in contact with a high voltage wire with no damage to the operator, but the above question arose in mind, and I would like your clarification.

J. J. N.

Answer: If a metal aerial ladder came in contact with power wires of different voltages, you would have "fireworks" and possible burning through of power lines. This would be serious, for a live power line falling on men on a ladder may result in serious injury or death.

If a ladder truck is not grounded either through outriggers or other means, and if the ladder were in contact with a high voltage wire, a person touching the chassis while standing on the ground might be subject to fatal voltage. In this operation he would serve as the ground connection between the truck and the ground, and carry the full load from the power wire through the aerial ladder to the ground.

Respective Hazards of Gasoline and Crude Oil

To the Editor:

At a fire in an oil refinery in which there are tanks containing crude oil in one location and gasoline in another, which presents the greater life hazard.

R. I. W.

Answer: To compare the relative hazards of crude oil and gasoline, when burning in tanks, many factors would have to be known.

It should be pointed out that crude oils almost always have some light constituents of low flash points, and therefore possess the explosive hazards of gasoline as well as hazards of boil-over and slop-over at fires involving tanks of crude oil.

While there is some danger of gasoline fumes exploding at a fire, particularly where such fumes are created outside of the zone of combustion, this same hazard is present in the case of crude oil containing light constituents.

It is the writer's personal opinion that crude oil storage presents a greater hazard than gasoline storage when involved by fire.

Wetting Agents

To the Editor:

I recently took a promotional examination in which the following statements were to be answered "true" or "false."

1. Wetting agents cut down the range of a stream.

2. Most manufacturers are not truthful in their statements concerning the use of their products—wet water.

"Ranger" FLAME-PROOFED FIRE FIGHTING TOOL

A necessary part of every Fire Company's equipment is the Fire Fighting Broom. This is the B-E-S-T!

Look at these features:

- ★ Flame Proofed Fibres
- ★ 4" Metal Collar reinforcement around neck
- ★ Heavy gauge rust-proof metal Head
- ★ Strong hickory handles
- ★ Overall length 60"
- ★ Meet U. S. Forestry and City Fire Department Specifications
- ★ Guaranteed

Look for the TRADE PERFEX MARK *trade mark.*

"25 Years of Quality Fibre Brooms"

Insist on PERFEX (Reg. U. S. Pat. Off.). If your dealer cannot supply you, write, giving your dealer's name, to:

PERFEX

41 Dinsmore Place, Brooklyn 8, N. Y.

The Fireman's Choice

Powerful Light

When he needs it—where he needs it

Big Beam

PORTABLE ELECTRIC HAND LAMPS

Model 700
2000-foot beam

Most powerful, heavy-duty hand lamp of its size. Adjustable 6-inch head. Operates on four standard No. 6 dry cells.

Model 211
1500-foot beam

Popular price, light weight, easy to carry. Adjustable 5-inch head. Operated on two standard lantern batteries.

Write for folder on complete information on these and other Big Beam dry-cell and storage-battery models.

U-C LITE MANUFACTURING CO.

1041 West Hubbard Street
Chicago 22, Illinois

3. Wet water will corrode a booster tank.

I would appreciate your opinions on the above questions.

A. M. A.

Answer: It is probable that wetting agents cut the range of small streams; however, on large streams, we do not believe the effect would be noticeable.

It should be borne in mind, however, that wetting agents are not yet commonly used in connection with large streams.

With regard to the corrosiveness of wet water, some of these wettings with which we are familiar have no more corrosive effect than ordinary water. However, they do expedite corrosion in this way: The wetting agent enables the water to penetrate through protective coatings, scale, etc., in booster tanks, and reach the metal surface. At this point you'll get the same corrosion as you will get with plain water in contact with the clean metal surface.

It is our understanding that some manufacturers producing wetting agents add a rust inhibitor, which makes the wet water actually less corrosive than fresh water.

Loftus Suction Collector

(*Continued from page* 125)

3. Bridging a broken water main (Fig. 4). The water main valves on each side of the break are closed, isolating the flow. Next, one or more pumpers are connected to hydrants below the break by means of multiple gates on hydrant outlets. A Suction Collector is then placed on the hydrant above the break. Four or six hose lines are stretched from the pumpers to the Collector, allowing the water to bridge the break and flow back to the main.

4. Using the water supply of standpipe systems of high buildings to fight a fire at another location (Fig. 5). If the street mains fail, a temporary supply of water may be obtained from the roof tanks feeding the standpipe systems of nearby structures. Hose lines may be stretched from standpipe outlets of six different buildings, if that number is necessary.

5. Supplementing the standpipe water supply of a very high building (Fig. 6). Assuming that a building of the height of the Empire State Building were equipped with a single continuous standpipe instead of a split system, water could be pumped from the street to its top level with pressure to spare. Single 50-foot lengths of 2½-inch high pressure hose tested at 900 PSI, would be stretched from the first pumper into the standpipe siamese of the skyscraper. A second pumper, or a high pressure hydrant, or a fireboat, would deliver at 300 PSI to the first pumper through the Suction Collector where the pressure would be stepped up to 600 PSI.

It permits taking a pumper away from the hydrant; placing it (pumper) in front of the fire building (in the case of buildings with floors 100 feet or more in depth) and using the full horsepower of pumper for deckpipe nozzle pressure.

The student of the science of fire fighting will readily recognize other uses for the Loftus Suction Collector such as in the use of fireboats to supply high pressure streams.

The Voice of Authority!

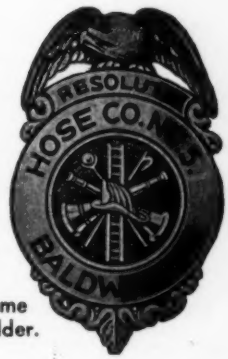
No longer is it necessary to yell and shout in order to be heard, for *The Audio Portable Electric Megaphone* will amplify your voice 2500 times!

Audio megaphones enable you to direct your men clearly and distinctly at fires, even in smoke-filled buildings or rooms, guide rescue crews, assist on the training grounds, and give instant warning in case of danger. They have been approved for Civilian Defense requirements.

Write or wire for full details and our new low price!

AUDIO EQUIPMENT CO.
805 Middleneck Rd., Great Neck, N. Y.

BADGES by Everson-Ross



Your choice of thousands of designs.

• • •

You are assured of excellent workmanship.

• • •

You are welcome to our new folder.

EVERSON-ROSS, Inc.
88 CHAMBERS ST., NEW YORK 7, N.Y.

Middletown Arena Fire

(*Continued from page* 123)

James W. Barker, the blaze started in the boiler room at the northeast corner of the structure.

The Town alarm was sounded at 7:00 A.M. and at 7:15 A.M. a call was sent to Newport, and Box 433 at Easton Beach was struck. Newport Chief Abel S. Eldridge and Deputy Chief William H. Connerton responded with Engines 2, 4 and 5 and Aerial Ladder 2 and the mechanician's truck. Navy Fire Fighters in charge of Chief Joseph E. Kirwin, also were called and responded with a rig. A total of over 70 firemen from Middletown, Newport and Navy departments fought the blaze, which was called controlled by 8:15 A.M. but not before the cinder block and stucco recreation center was a wreck. Recall sounded at 11:28 A.M.

Fire fighters prevented the fire from extending to the Beach Hotel, only 100 feet distant, although flying embers ignited the roof and radiated heat scorched the structure.

The fire was attached on three sides. A Newport crew of six narrawly escaped injury when the east wall fell as they were directing a stream from a porch into the flames. They tumbled back in haste, uninjured. The aerial ladder was rushed out of the way of further collapse.

Chief Barker's men, with lines from two pumpers, concentrated on the south, or beach side of the Arena; Navy fire fighters under Chief Kerwin operated against the southwest corner, and the Newport crews attacked from the south and east.

The 12 waxed bowling alleys and other flammables fed the fire which roared into the sky. Firemen were forced back again and again but returned to keep water on the flames.

No injuries were reported and the rains held down the crowd of spectators.

Arson Investigation

(*Continued from page* 114)

area should be cleared of all persons not working on the emergency. A police guard should be posted, to keep unauthorized persons out of the area. All windows and other possible openings in the building where the bomb is found should be opened to allow dispersal of any blast. All gas, electric, steam or compressed air lines should be shut off. Fire fighting units should lay hose lines and have same charged, ready for any fire or blast. The bomb should be surrounded by sand bags, mattresses or any available material, in such a manner, that the force of the blast will be directed where it will do the least harm.

In all cases, the Army, Navy or some explosive company should be contacted by phone and the services of an expert obtained as quickly as possible. Where the service of an expert cannot be obtained quickly enough, the bomb should be covered with sand bags. Inexperienced persons should not attempt to render the bomb harmless. A common fallacy is that the correct procedure is to submerge the infernal machine in water. To do this may cause an immediate detonation. The bomb may be timed by an electrical mechanism and water could cause a short circuit and explode the charge. Also, the bomb may contain a chemical that would ignite upon contact with water. Where dynamite is used, soaking in water would separate the nitro-glycerine, which would present a greater danger. In any event, most fuses and many blasting gelatines are waterproofed and would not be affected by submersion. Where it is deemed essential to submerge, light lubricating oil

Rate $8 per inch less 10% for three or more consecutive insertions.

Classified Advertisements

Closing date for copy 25th of month preceding date of issue.

! CLOSE OUT SALE !
SAVE MONEY
HOSE & ACCESSORIES AT GREATLY REDUCED PRICES

UNUSED SURPLUS

1½"x50' DJ CRL fire hose, unused, but soiled .....$ .54 ft. cpld.
1½"x50' SJ CRL fire hose, unused, but soiled .....$ .29 ft. cpld.
2½"x50' SJ CRL fire hose, unused, but soiled .....$ .49 ft. cpld.

UNUSED & CLEAN FACTORY PACKED

1½"x50' SJ CRL fire hose....$ .34 ft.
1½" couplings attached ...$ 4.50 set
2½"x50' SJ CRL fire hose....$ .60 ft.
2½" couplings attached ...$ 6.75 set
2½"x10' hard suction hose....$14.50 lgth., cpld.
1"x50' booster hose .....$ .32 ft., cpld.
4"x10' DJ soft suction hose, 4½" couplings, long handle female .....$16.50 lgth., cpld.

BRASS ITEMS

Mechanical Foam playpipes (Leading Manufacturer) w/adapter (Cost $50.00 each) .....$8.50 ea.
2½" nozzle holders .....$ .95 ea.
2½" hose caps & chains.....$2.50 ea.

IMMEDIATE DELIVERY

TOWSON HOSE & RUBBER CO.
104 West Joppa Road
Baltimore 4, Maryland
Phone Towson 1672

FOR SALE

Gamewell fire alarm box system (manual), consisting of 75 pull boxes, 3 Cole transmitters, 3 take-up reels, 5 registers, 1 time-clock, and an 8-circuit board with rectifiers for sale; will sell individual units or complete system for any reasonable offer. Write to:

Fire Chief Norman Litz
Fire Department, Waukegan, Ill.

FOR SALE

Fire truck 1½ ton Dodge 1942 model. Equipped with John Bean high pressure pump model R-55. Good condition. Price $650.00. FOB, Balboa, Canal Zone.

E. J. LOWE
Box 28, Balboa, Canal Zone

FOR SALE

One (1) 1937 Pirsch, combination quintuplet fire apparatus, consisting of 750-gallon pump, booster pump with 200 feet of booster hose and 90-gallon booster tank, hose compartment for 1,000 feet of 2½ inch hose, 250 feet of ground and scaling ladders, 65-foot junior aerial ladder and accessory equipment.

One (1) 1921 Stutz 750-gallon pumper apparatus, new motor, rebuilt rotary pump, hose bed for 2,000 feet of 2½ inch hose, forcible entry tools and accessories.

Both of the above apparatus are in good shape, and are in service at the present time. Interested parties please contact:

Fire Chief Norman Litz
Fire Department, Hq., Waukegan, Ill.

FOR SALE

Two Preakness fire pump trailers with 200 gallon water tank, gasoline driven pump, 1½" hose, and misc. equipment—Demonstrators in good condition—$1250.00 each. Ideal for industrial plant, airport, lumber camp, etc. Also one 55 GPM gasoline driven portable pump at cost.

PREAKNESS INCORPORATED
972 Broad St., Newark 2, N. J.

FOR SALE

Demonstrator—Sharpsville "JEEP" Fire Truck, mileage approximately 900 miles. Includes 200-gal. booster tank and self-priming 200 g.p.m. midship pump, hose reel with booster hose and nozzle. Three individually-controlled spray nozzles mounted under front bumper. Truck has four-wheel drive with transfer case, and pump may be operated while truck is in motion. Write or phone.
SHARPSVILLE STEEL FABRICATORS, Inc.
Sharpsville, Pennsylvania

FIRE TRUCKS FOR SALE

1—1923 Day Elder Ladder Truck with 1937 Continental Engine (Recently Overhauled) 36' overall length.
1—40'—2 Section Extension Ladder
2—24'—2 Section Extension Ladders
1—24' Single Ladder 1—18' Single Ladder
2—12' Roof Ladders
Other assorted equipment—Good condition.
1—1923 American-La France—1000 gal. Pumper. Assorted equipment—Good condition.
Both these trucks are now in use. Write—

Borough Clerk, BOROUGH OF EMERSON, N. J.

NOTICE

Notice is hereby given that the Township Committee of the Township of Denville in the County of Morris and State of New Jersey will sell to the highest bidder at public auction the hereinafter described fire apparatus on March 18, 1953, at eight o'clock P.M. at the Township Committee meeting rooms in the Fire House on Route 53 (formerly Route 5N) in said Township.

One 1926 American-La France Fire Engine triple combination pump chemical and hose motor car.

The above apparatus may be seen and inspected at the garage of the Denville Water Department on Morris Avenue in said Township on business days between the hours of nine A.M. and four P.M.

No bid will be received below $300.00.

CLAIRE R. KELLY,
TOWNSHIP CLERK.

FOR SALE

One USED MACK CITIES SERVICE TRUCK, complete with Booster Pump and Tank. Also, several used 500 GPM Pumping Engines. These units are in good condition. For particulars, write:

JACK FIELDING
Centerville, Crawford County, Pennsylvania

FOR SALE

1—1930 Seagrave 500 gal. pumper. 1200 ft. of 2½" and 200 ft. 1½" hose also for sale, including other miscellaneous equipment.

CHIEF CARL LADENDORF
GLENVIEW VOLUNTEER FIRE CO.
1902 Glenview Rd., Glenview, Ill.

FIRE APPARATUS FOR SALE

Hahn 500 gallon pumper, 1937, with all triple combination Equipment.
Hahn 1934, 350 gallon pumper, with all triple combination Equipment.
Both above pumpers now in service but available for immediate delivery, in excellent working condition.
Priced reasonable. For pictures and details, write—

Jas. B. Hunt Mfg. Company
1462 Liberty Street Trenton, N. J.

FREE Catalog

BRONZE TABLETS

for

HONOR ROLLS

MEMORIALS • AWARDS • TESTIMONIALS

COMMEMORATIVE PLAQUES

Every fire department . . . every fire house . . . should keep on hand this big 48-page catalog, illustrating 150 suggestions for handsome, imperishable, solid bronze tablets. Sent free—ask for Catalog FE1.

TROPHIES and MEDALS, TOO!

Special catalog illustrates 900 cups, trophies, medals, etc. suitable for presentation as prizes and awards in all kinds of contests, or for testimonial purposes. Sent free — ask for Catalog FE2.

INTERNATIONAL BRONZE TABLET CO., INC. 150 WEST 22nd ST. NEW YORK 11 N. Y.

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON *Janesville Quality*

We have devoted our every effort to design turn out suits to meet the fireman's need. This we have done faithfully and painstakingly . . . . that is why more and more firemen specify Janesville.

Janesville coats are available trimmed in "Scotchlite"—a terrific safety factor in the dark or in smoke. "Lights up like a lamp" when light hits it.

WE WELCOME YOUR INQUIRY

Janesville APPAREL CO.
JANESVILLE, WISCONSIN

or kerosene should be used. This would lessen, somewhat, the danger of detonation and stop any clockwork mechanism.

The investigation of sabotage by various devices and materials for damaging machinery or other equipment seldom comes within the province of the arson investigators. It is mentioned here, only because it may give them a lead where such sabotage has occurred, prior to a fire. In such cases, a thorough investigation of such acts of destruction may point the finger of suspicion upon a plant worker, who may have been responsible for both the mechanical destruction and the fire.

Today the military security of the United States and the safety of the defense industries is of paramount importance to all of us. There is an abundance of evidence to show that every branch of the Communist Party is pledged to help the Soviet Union, in the event of a war with U.S.S.R. Therefore, we know that should we find ourselves at war, there would be organized sabotage throughout the length and breadth of the United States. The Government has taken every possible step for security; however, it cannot eliminate this danger entirely. The saboteur can and will attack with a certain amount of success.

Knowing this, everyone charged with the responsibility of plant management, and all members of police and fire departments, must be eternally vigilant to detect and prosecute all attempts of sabotage. When there is any evidence of sabotage in any defense industry or military establishment, the help of the Intelligence Forces of the Navy, Army or Air Force, the Federal Bureau of Investigation, and the State Fire Marshal's Office, should be sought. In many cases, the special investigator of the National Board of Fire Underwriters will be of great assistance. The Government laboratories and experts in various fields are available and will render every assistance in fires, where sabotage is suspected.

The Cover Photo

This month's cover illustration shows the spectacular 3-alarm fire that destroyed three floors of the five-story Goldstein Brothers Warehouse, 214 McCrea Place, January 7 last, and menaced the adjoining Hotel Severin and the Fair Building at 40 Jackson Place, Indianapolis, Ind.

Fast-working firemen, manning over 20 pieces of equipment, managed to confine the roaring blaze, but as a safety measure evacuated occupants of the hotel, and residents of 28 apartments in the Fair building. Also evacuated were tenants of the Commercial Hotel, 215 So. Illinois.

The savage blaze, the cause of which was undisclosed, broke out at 6:05 P.M. Two minutes later a second-alarm was sounded, followed by a third alarm. The blaze apparently started on the third floor of the warehouse, spread upward to engulf upper floors and break through the roof. A firewall between the warehouse and Hotel Severin helped fire fighters make a stop, but water and smoke damaged all exposures.

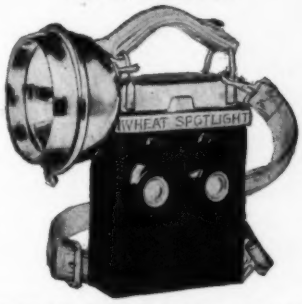
Heavy crowds, augmented by convention-goers and travelers from the nearby station, hampered firemen and extra police were called. The "situation secure" order was issued at 7:45 P.M. Loss may reach $250,000.

When you need light—do you want—FLASH or LIGHT?

Before you specify consider

WHEAT
RECHARGEABLE LIGHTS

(no dry batteries)



WHEAT RECHARGEABLE LIGHTS GIVE YOU

1. UNFADING LIGHT—25,000 beam candlepower for 5-6 hours continuous operation.
2. DEPENDABLE LIGHT — bulbs designed for 300 plus hours. With one WHEAT CHARGE INDICATOR (separate unit) you can check all your WHEAT lights between alarms.
3. LOW MAINTENANCE—battery may be recharged over 200 times.
4. PROVEN SERVICE—thousands in fire service —a trusted friend at a fire.

For details and address of your local dealer write

KOEHLER MANUFACTURING CO.

#1 HOWLAND ST., MARLBORO, MASS.

Leaders in Portable Lighting for over 35 years.

The New Improved Dayton

COMBINATION EXPANDER

6 FEATURES IN 1

Expander for Hose Sizes from ¾" to 3"

Greater Expansion Greater Economy
Easy to operate
Segments Furnished with Adjustable Spacer
Visual Indicator to Determine Amount of Expansion

BE PREPARED FOR ANY EMERGENCY

THE COST IS LOW
Send for Illustrated Bulletin

Dayton Fire Equipment Co.
1242-48 W. 2nd St., Dayton 7, Ohio

Here's a revolutionary piece of equipment that will double your department's efficiency and protect your men from excessive strain and exhaustion. One man can carry the ELKHART HOSE CONTROL, put it on a line and operate the nozzle with speed and safety. Even more than that—

- **It will stand alone—on ice, snow, roofs, gravel or concrete—without any whip or back-lash.**
- **It takes the place of a monitor nozzle.**
- **It releases manpower for other duties.**
- **It's an excellent carrying device on a moving hose line—three men can move forward, with a charged line, open under pressure. With hose line attached and nozzle closed, one man can easily move it to another position.**
- **It's one of the greatest fire-fighting tools ever devised—of particular value to undermanned departments.**

Shown in action with the Elkhart Hose Control is the Elkhart J-200 Mystery Nozzle—a fog nozzle capable of discharging up to 475 gallons per minute, set at 30° fog, with 125 pounds nozzle pressure. Its huge output provides an enormous blanket or wall of solid fog.

ELKHART BRASS MFG. CO., Inc.

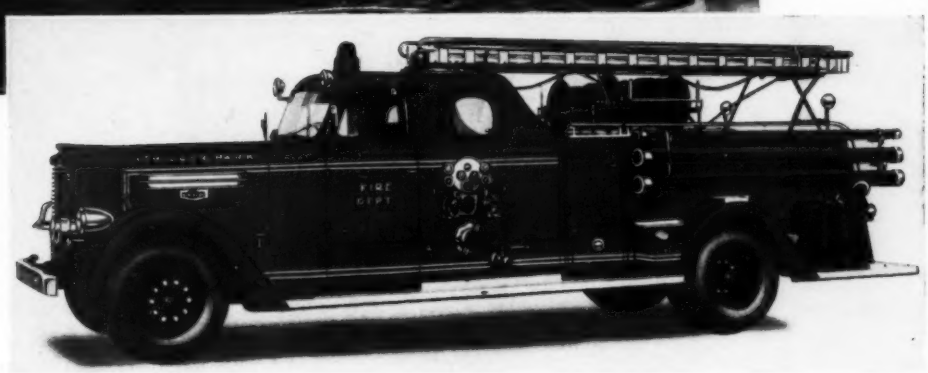
1902 — FIFTY YEARS OF FIRE FIGHTING PROGRESS — 1952

ELKHART, INDIANA

ADVERTISING INDEX

FIRE ENGINEERING
FEBRUARY, 1953

	Page
Akron Brass Mfg. Co.	86
American District Telegraph Co.	102
American Fire Apparatus Co.	84
American Fire Equipment Co.	151
American LaFrance-Foamite Corp.	91
American Rubber Mfg. Co.	130
Ansul Chemical Co., Fire Ext. Div.,	157; *Back Cover*
Arguslite Co.	160
Atlas Safety Equipment Co., Inc.	95
Attwood Brass Works, Inc.	154
Audio Equipment Co., Inc.	165
Badger Boat Builders	158
Bar-Way Mfg. Co.	144
Bean Div., John; Food Machinery & Chemical Corp.	103
Biersach & Niedermeyer Co.	136
Blackinton & Co., Inc., V. H.	137
Body Guard Mfg. Co.	160
Braxmar Co., C. G.	150
Buckeye Iron & Brass Works	148
Cairns & Bro.	161
Chesebrough Mfg. Co.	152
Circul-Air Corp.	154
Darley & Co., W. S.	139
Dayton Fire Equipment Co.	167
E & J Manufacturing Co.	90
Elkhart Brass Mfg. Co., Inc.	168
Emerson Co., J. H.	*Inside Front Cover*
Eureka Fire Hose Div., U. S. Rubber Co.	127
Everson-Ross, Inc.	165
Fabric Fire Hose Co.	83
Federal Enterprises, Inc., Signal Div.	81; 134
Firewater Company	151
Four Wheel Drive Auto Co.	131
Gamewell Co.	106
General Electric Co.	96
Gerstenslager Company	155
Globe Manufacturing Co.	156
Goodrich Co., B. F.	85
Hale Fire Pump Co.	157; 163
Halligan Tool Co.	163
Hannay & Son, Inc., Clifford B.	98
Howe Fire Apparatus Co.	153
International Bronze Tablet Co., Inc.	167
International Harvester Co.	86
Interstate Forging & Supply Corp.	144
Janesville Apparel Co.	167
Kidde & Co., Inc., Walter	129
Koehler Mfg. Co., Inc.	167
Kohler Company	159
La Marche Mfg. Co.	164
Leece-Neville Co.	153
McCulloch Motors Corp.	92
McIntire Brass Works, F. N.	162
Mack Manufacturing Corp.	93
Marine Products Co.	155
Maxim Motor Co.	89
Memco Aerial Ladder	162
Midwestern Mfg. Co.	100
Mine Safety Appliances Co.	87
Morning Pride Mfg. Co.	164
Motorola, Inc.	104
Myers & Bro. Co., F. E.	161
National Foam System, Inc.	135
Oberdorfer Foundries, Inc.	146
Onan & Sons, Inc., D. W.	156
Pacific Marine Supply Co.	138
Perfex	165
Pirsch & Sons Co., Peter	*Inside Back Cover*
Powhatan Brass & Iron Works	140
Pyrene Mfg. Co.	139
QRS Neon Corp.	149
Radio Corp. of America	145
Rockwood Sprinkler Co.	105
Russell Uniform Co.	162
Scott Aviation Corp.	132-133
Seagrave Corp., The	99
Sharpsville Steel Fabricators, Inc.	147
Sireno Co., Inc.	152
Smith & Co., D. B.	97
Stephenson Corp.	142
Sterling Siren Fire Alarm Co., Inc.	158
U-C Lite Mfg. Co.	165
United States Rubber Co.	149
Universal Fire Apparatus Corp.	148
W-B Manufacturing Co.	143
Ward LaFrance Truck Corp.	101
Waterous Company	141
Waukesha Motor Co.	94
Wentworth-Forman Co., Inc.	162



PIRSCH PUMPERS

500, 750, 1000, 1250 or 1500 GPM

A Pirsch pumper in any size is America's finest pumper. It has more than one-half century of fire apparatus manufacturing experience behind it. You profit by experience when you buy "PIRSCH" and you get the best.

1000 Gallon Pirsch Pumper shown above has been delivered to Schiller Park, Ill.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

FOR SKILLED PERFORMANCE BY UNSKILLED OPERATORS

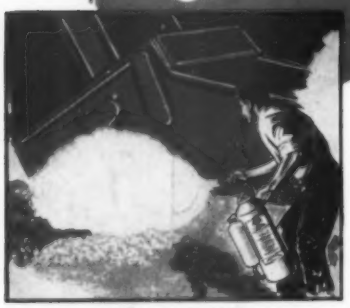
INDOORS AND OUTDOORS

YOUR *BEST* PROTECTION

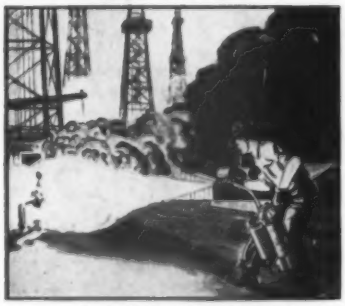
FOR FLAMMABLE LIQUID, GAS AND ELECTRICAL FIRES

ANSUL

DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT

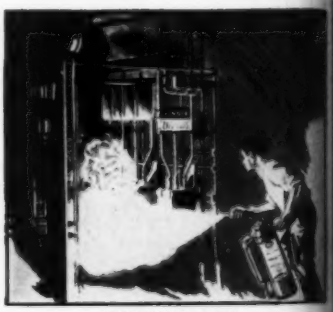


TEXTILE LINT FIRES



FLAMMABLE LIQUID FIRES

GAS FIRES



ELECTRICAL FIRES

ANSUL Model 20-B

HAND PORTABLES

•

WHEELED PORTABLES

•

STATIONARY EXTINGUISHERS AND PIPED SYSTEMS

•

TRUCK MOUNTS, TRAILERS AND SELF-PROPELLED UNITS

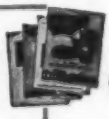
•

Ansul Dry Chemical Fire Extinguishing Equipment has world-wide recognition as preferred protection for flammable liquid, gas and electrical hazards. Yet a surprising number of Ansul Extinguishers are used to protect textile mills and paper mills against serious loss from surface fires such as occur in textile lint and combustible paper dust.

The textile and paper making industries rely on Ansul Extinguishers for quick control of dangerous flash fires in class "A" (ordinary combustible) materials. Any remaining embers are quenched with small quantities of water, thereby keeping water damage at a minimum.

Surface fires in textile lint and combustible dusts spread rapidly. They need quick control. If you have serious lint or dust hazards, talk with your Ansul representative. He may have suggestions to reduce fire damage and lost production time.

Send for File No. 914. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped systems and Ansul 2000 lb. Stationary Units.



ANSUL CHEMICAL COMPANY

FIRE EXTINGUISHER DIVISION

MARINETTE • WISCONSIN

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES
ALSO MANUFACTURERS OF INDUSTRIAL CHEMICALS, REFRIGERANTS AND REFRIGERATION PRODUCTS

N

G

wide
elec-
s are
from
dust.
shers
com-
small
mum.
They
with
e fire

L

IY
ION
SIN
RIES
UCTS